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DOES A PRIMARY TUBERCULOUS INFECTION AFFORD ADEQUATE PROTECTION AGAINST CONSUMPTION?

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The ability of nonallergic individuals to cope successfully with initial infections of varied doses of tubercle bacilli such as are commonly received in average human experience apparently is so prevalent in man that but few can identify the time they acquired the primary type of tuberculosis by any known illness or impairment of health directly attributable to this disease. Almost without exception, one remains entirely ignorant of the fact that one has primary tuberculosis until its presence is revealed by a positive reaction to tuberculin. To assume that relatively few bacilli are received usually when first infections occur and to conclude that small initial dosage unaided by some form of natural resistance fully explains why primary tuberculosis tends to be a benign disease with great regularity does not seem to harmonize with clinical observations reported by Wessler and Bass,¹ Hempelmann,² Ribadeau-Dumas and Bécélère,³ Bernard and Debré,⁴ Eliasberg and Neuland,⁵ Greenberg,⁶ Debré and Joannon,⁷ Bernard and Paraf,⁸ Wallgren,⁹ Gerstenberger and Burhans,¹⁰ Paulsen,¹¹ Goldberg and Gasul,¹² Henricke,¹³ Stewart¹⁴ and others, which show that infants and children are admirably equipped to withstand and to overcome successfully severe primary tuberculous

infections, and to resolve single and multiple large acute pulmonary infiltrations to relatively insignificant calcified scars.

These observations, which have revealed the survival and the restoration to apparently normal health of heavily infected infants and children, indicate that uninfected nonallergic individuals possess a remarkable inherent ability to repair, to resolve and to calcify extensive as well as slight damage wrought by this organism's first invasion of the body. Presumably an unnamed and unmeasured but reliable mechanism of natural resistance normally resides in every healthy human body, which operates so effectively that it regularly reduces the health impairing, tissue necrotizing and death dealing potentialities of the tubercle bacilli to the level that makes it possible to classify tuberculosis of first infection correctly as a benign disease whose prognosis is good and also permits one rarely if ever to witness death following authentic, single primary tuberculous infections.

That the normal status of uncontaminated healthy individuals provides a protection against tuberculosis which practically guarantees that the first infection by the tubercle bacillus, to which all are naturally susceptible, will result quite regularly in a benign and rarely fatal disease seems to be a logical rather than a rash interpretation of the situation. Regardless of how one may feel inclined to interpret this evidence, the importance of seeking data as to whether primary tuberculous infections enhance or impair the normal mechanism of resistance with which man is endowed by nature to combat the disease seems apparent. This report, based on records of eighty-four consumptive patients examined at the Lymanhurst School for Tuberculous Children in Minneapolis is submitted, therefore, with the conviction that the observations made on these children have a significant bearing on the answer to the question; Does a primary tuberculous infection afford adequate protection against consumption? These eighty-four cases include all the consumptive patients found in a group of slightly more than 10,000 children examined at Lymanhurst for tuberculosis. No cases were omitted from the group selected for this study unless the diagnosis was still pending or was uncertain.

Table 1 contains the records of four children who gave negative tuberculin tests and had normal roentgenograms of the chest when first examined. The evidence obtained at that time indicated that these children had never experienced a primary tuberculous infection. On reexamination, however, three, six, seven and ten years, respectively, after their first study was made, each of these four patients was found to have consumption. Details as to what transpired during these intervals which led to their present conditions are unknown. Since information as to when and how

From the Lymanhurst School for Tuberculous Children and the Department of Pediatrics, University of Minnesota Medical School.

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2. Hempelmann, T. C.: The Prognosis of Pulmonary Tuberculosis in Infancy, *Am. Rev. Tuberc.* **1**: 99 (April) 1917.

3. Ribadeau-Dumas, L., and Bécélère, H.: Evolution de la lésion initiale de la tuberculose pulmonaire chez l'enfant du premier âge, *Bull. et mém. Soc. méd. d. hôp. de Paris* **43**: 651 (July 4) 1919; abstr. *Arch. de méd. d. enf.* **23**: 728 (Dec.) 1920.

4. Bernard, L., and Debré, R.: Un cas de tuberculose du nourrisson, à début manifeste simultanément par des signes chingues, radiologiques et biologiques, et évolution bénigne, grâce à l'isolement précoce, *Bull. et mém. Soc. méd. d. hôp. de Paris* **44**: 1658 (Dec. 31) 1920.

5. Eliasberg, H., and Neuland, W.: Epituberculous Infiltration of the Lung in Children, *Jahrb. f. Kinderh.* **93**: 88, 1920; **94**: 102, 1921.

6. Greenberg, David: Chronic Tuberculous Hilus Pneumonia in Children, *Am. J. Dis. Child.* **21**: 65 (Jan.) 1921.

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12. Goldberg, Benjamin, and Gasul, B. M.: Epituberculosis: A Study of Ten Cases for a Period of over Two Years, *Am. J. M. Sc.* **150**: 824 (Dec.) 1930.

13. Henricke, S. G.: Benign Infiltrations in the Childhood Type of Tuberculosis, *Northwest Med.* **30**: 109 (March) 1931.

14. Stewart, C. A.: Pulmonary Diseases: 5,816 Cases in Children with Special Reference to the Childhood Type of Pulmonary Tuberculosis, *Am. J. Dis. Child.* **43**: 802 (April) 1932.

often these four patients were infected is lacking, their records are valueless in determining exactly how they became consumptive. Their incomplete records also are worthless with respect to the evidence they yield relative to the degree of protection primary tuberculous infections confer against reinfections. On the basis of the data available, no conclusions seem warranted except to the effect that consumption was found in four patients in whom tuberculin tests were negative, three or more years previously, and roentgenograms were normal.

In table 2, observations are recorded for nineteen children who, when first examined, reacted positively to

reinfection pulmonary tuberculosis (phthisis) were found by roentgen examination, and without exception the individual tuberculin reactions were positive. Additional lesions were also visualized on the films taken at that time in this group of cases, which were deemed sufficiently characteristic and conspicuous to warrant their identification as calcified scars of primary tuberculosis. In sixteen instances these scars were present in the form of calcium deposits in the hilus glands, and in the form of Ghon tubercles associated with calcification of regionally related lymph nodes in the remaining nine children. Thus, when first examined, primary tuberculosis was found coexisting with reinfection

TABLE 1.—Records of Four Children Whose Initial Examinations Were Negative But Who Had Reinfection Pulmonary Tuberculosis on Re-examination

Number	Sex*	Tuberculin Reaction	Initial Roentgen Interpretation	Date	Age	Later Roentgen Interpretation	Date	Interval in Years	Present Condition
1	♀	Negative	Negative	6/22	13	Moderately advanced phthisis	6/32	10	Far advanced, in sanatorium
2	♀	Negative	Negative	9/22	13	Moderately advanced	2/30	7½	Moderately advanced, in sanatorium
3	♀	Negative	Negative	5/23	13	Far advanced phthisis	5/29	6	Far advanced, in sanatorium
4	♀	Negative	Negative	10/28	17	Moderately advanced	9/31	3	Moderately advanced, in sanatorium

* In the tables, ♂ indicates male; ♀, female.

TABLE 2.—Records of Nineteen Children With Reinfection Pulmonary Tuberculosis When First Examined, but no Evidence of Primary Tuberculosis

Number	Sex	Tuberculin Reaction	Initial Roentgen Interpretation	Date of Initial Roentgen Examination	Age	Source of Exposure	Present Condition
1	♂	Plus	Far advanced phthisis.....	3/25	9	?	Died 3/31
2	♀	Plus	Moderately advanced with cavity....	3/22	10	?	Living in sanatorium; moderately advanced
3	♀	Plus	Incipient parenchymatous lesion, left apex	6/24	12	?	Moderately advanced, 1928; lost trace then
4	♂	Plus	Far advanced with cavity.....	7/29	12	?	Died, 1932
5	♂	Plus	Moderately advanced apical lesion..	7/30	12	Roomer	Lost
6	♀	Plus	Moderately advanced, bilateral with cavity	11/29	13	Father	Living in sanatorium; moderately advanced
7	♀	Plus	Bilateral apical; moderately advanced	6/28	13	Mother	Living in sanatorium; moderately advanced
8	♀	Plus	Far advanced with cavities.....	10/28	13	Mother	Far advanced; living
9	♂	Plus	Far advanced	3/22	13	Sister	Died, 1932
10	♂	Plus	Apical infiltration; moderately advanced	1/25	14	?	Living, 1930; arrested
11	♀	Plus	Moderately advanced apical with cavity	6/24	14	Father	Living in sanatorium; moderately advanced
12	♀	Plus	Moderately advanced	4/23	14	Brother	Died, 12/20/24
13	♀	Plus	Moderately advanced	7/24	14	Grandmother	Living; arrested
14	♀	Plus	Moderately advanced; bilateral.....	9/1/23	14	?	Living in sanatorium; moderately advanced
15	♂	Plus	Moderately incipient	4/31	15	?	Living at home; also had tuberculosis of the dorsal spine; arrested
16	♂	Plus	Far advanced; bilateral with cavity	6/30	15	Brother	Living in sanatorium; far advanced
17	♂	Plus	Far advanced	8/23	16	?	Died, March, 1924
18	♂	Plus	Incipient	8/30	16	Father	Living in sanatorium; incipient, arrested
19	♀	Plus	Bilateral, incipient	2/31	19	Friend	Living at home; arrested

tuberculin and had roentgen evidence of consumption (reinfection pulmonary tuberculosis) present in various stages. No lesions characteristic of primary tuberculosis, however, were found in this group of patients by roentgen study, and no knowledge exists as to how long they had been allergic to tuberculin previous to their first visit to Lymanhurst. The observations made on this group of ten children thus fail to reveal the sequence of events which led to the condition found and fail to contribute evidence for or against the notion that primary tuberculous infections afford protection against consumption.

The observations made on the cases listed in table 3, however, yield clues which indicate that primary tuberculous infections frequently fail to prevent the developing of consumption. In each of these twenty-five children, parenchymal infiltrations characteristic of

tuberculosis (consumption) in this group of twenty-five children. Since in these instances it is not known for certain whether the calcified primary types of lesions antedated or followed the appearance of the reinfection types of lesions, apparently the only deduction that can be drawn that coincides with the known facts relative to this group of patients is to the effect that primary and reinfection types of pulmonary tuberculosis are found coexisting in certain children when first examined. I am inclined to feel, however, that these observations provide circumstantial evidence which indicates that primary tuberculous infections fail to prevent consumption from developing. This opinion is supported by the observations made on the group of cases listed in table 4, whose records are known with detail sufficient to prove that primary tuberculous infections do not prevent consumption from developing at

some later period and to indicate that first infections by *Mycobacterium tuberculosis* alter the normal state of resistance possessed by the uninfected body in such a manner that, instead of again being able to experience the benign form of the disease, the patient is doomed

presence of Ghon tubercles associated with calcified hilus glands. In no instance was evidence of reinfection types of tuberculosis found in this series of thirty-six children coexisting with the primary disease present at the time they were first examined. At that time,

TABLE 3.—Records of Twenty-Five Children With Primary and Reinfection Pulmonary Tuberculosis Coexisting When First Examined

Number	Sex	Age	Tuberculin Reaction	Initial Roentgen Examination		Source of Exposure	Present Condition and Treatment
				Date	Interpretation		
1	♀	10	Plus	2/28	Calcified Hilus Glands and	Mother	On pneumothorax
2	♀	11	Plus	11/26		?	At home; arrested
3	♀	12	Plus	3/23		Father	In sanatorium; moderately advanced
4	♀	12	Plus	9/24		Father	In sanatorium; far advanced
5	♀	12	Plus	4/29		Mother	At home; arrested
6	♀	13	Plus	2/30		Mother	At sanatorium; moderately advanced
7	♀	14	Plus	2/24		Father	At sanatorium; arrested
8	♀	14	Plus	11/29		Sister	At sanatorium; incipient
9	♀	14	Plus	4/30		Mother, father	At sanatorium; moderately advanced
10	♀	15	Plus	1/24		Father	Died, 1927
11	♀	15	Plus	1/28		Uncle	At sanatorium; arrested
12	♀	16	Plus	1/26		Sister, brother	At sanatorium; far advanced
13	♀	16	Plus	9/28		Mother	At sanatorium; moderately advanced
14	♀	17	Plus	2/27		Friend	At home; moderately advanced
15	♀	18	Plus	6/24		Mother, father	Pneumothorax
16	♀	18	Plus	4/22		Mother, father	Died, 1930
17	♀	7	Plus	4/31	Ghon Tubercles and	Father	At home; incipient
18	♀	7	Plus	4/32		Mother	At home; incipient
19	♀	9	Plus	6/26		Father	Died, 1926
20	♀	9	Plus	11/31		Father	Pneumothorax
21	♀	11	Plus	5/23		?	Lost contact
22	♀	13	Plus	4/27		Father, sister	At home; moderately advanced
23	♀	14	Plus	4/29		Father	At home; moderately advanced
24	♀	14	Plus	4/31		Grandfather	At home; pneumothorax
25	♀	15	Plus	6/31		Aunt, father	At home; pneumothorax

TABLE 4.—Records of Thirty-Six Children With Primary Tuberculosis Exclusively on First Examination in Whom Reinfection Pulmonary Tuberculosis Later Developed

No.	Sex	Age	Tuberculin Reaction	First Roentgen Examination		Later Roentgen Examination		Source of Infection	Present Condition and Treatment	Age at Time of Discovery of	
				Interpretation	Date	Interpretation Stage of Consumption Present	Interval, Months			Primary Tuberculosis	Adult Type of Tuberculosis
1	♀	9	Plus	Negative; no reinfection tuberculosis	10/24	Far advanced	84	?	Far advanced; in sanatorium	9	16
2	♀	10	Plus		7/22	Moderately advanced	103	Father	Died 4/32	10	20
3	♀	11	Plus		11/26	Moderately advanced	58	Aunt	Moderately advanced; home care	11	16
4	♀	12	Plus		7/23	Incipient	53	Mother	Incipient; home care	12	17
5	♀	12	Plus		1/25	Far advanced	77	Sister	Far advanced; in sanatorium	12	18
6	♀	12	Plus		1/28	Far advanced	18	?	Died, 1929	12	13
7	♀	14	Plus		2/27	Incipient	23	Mother	Incipient; in sanatorium	14	16
8	♀	14	Plus		7/27	Incipient	12	Father	Moderately advanced; in sanatorium	14	16
9	♀	16	Plus		7/28	Incipient	4	Sister	Moderately advanced; pneumothorax	16	16
10	♀	11	Plus	Calcified hilus glands; no reinfection tuberculosis	9/26	Far advanced	45	Brother, sister	Far advanced; at home	11	15
11	♀	11	Plus		4/29	Incipient	18	Aunt	Incipient; home	11	12
12	♀	11	Plus		4/26	Incipient; bilateral	66	Father	Moderately advanced; pneumothorax	11	16
13	♀	11	Plus		4/25	Incipient	53	Sister	Incipient; at home	11	16
14	♀	12	Plus		1/29	Incipient	39	Mother	Incipient; pneumothorax	11	14
15	♀	12	Plus		12/21	Far advanced	120	Father	Died, 1932	12	22
16	♀	13	Plus		6/27	Incipient	24	Father	Incipient; at home	13	15
17	♀	13	Plus		1/28	Moderately advanced	29	Sister	Moderately advanced; in sanatorium	13	15
18	♀	14	Plus		10/25	Moderately advanced	26	Grandparent	Far advanced; in sanatorium	14	20
19	♀	14	Plus		5/28	Moderately advanced	28	Sister	Moderately advanced; pneumothorax	14	16
20	♀	15	Plus		4/28	Incipient	11	Mother	Incipient; in sanatorium	15	16
21	♀	16	Plus		7/25	Moderately advanced	11	Sister	Lost contact	16	17
22	♀	17	Plus		4/27	Moderately advanced	8	Sister	Died, 1929	17	18
23	♀	17	Plus		3/30	Moderately advanced	21	?	Moderately advanced; at home	17	19
24	♀	5	Plus	Ghon tubercle and calcified glands; no reinfection tuberculosis	6/22	Far advanced	24	Aunt, uncle, mother	Died, 1924	5	7
25	♀	8	Plus		6/23	Incipient	63	Father	Far advanced; in sanatorium	8	13
26	♀	9	Plus		11/23	Far advanced	84	Father, brother	Died, 1930	9	16
27	♀	10	Plus		10/24	Incipient	23	?	Bilateral; moderately advanced; at home	10	22
28	♀	11	Plus		4/26	Incipient	49	Father	Pneumothorax	11	15
29	♀	12	Plus		1/27	Moderately advanced	37	Father, mother	Far advanced; in sanatorium	12	15
30	♀	12	Plus		2/27	Moderately advanced	29	?	Far advanced; in sanatorium	12	14
31	♀	13	Plus		3/22	Moderately advanced	22	Uncle	Died, 1924	13	15
32	♀	13	Plus		2/26	Incipient	72	?	Incipient; at home	13	19
33	♀	13	Plus		11/22	Incipient	59	?	Lost contact	13	18
34	♀	13	Plus		11/26	Incipient	41	Uncle, aunt, grandmother	Moderately advanced; in sanatorium	13	17
35	♀	15	Plus		4/26	Moderately advanced	69	Father	Moderately advanced; in sanatorium	15	21
36	♀	16	Plus		3/22	Moderately advanced	9	Sister	Died, 1924	16	17

thereafter to have some reinfection type of tuberculosis (consumption and the like) develop, if successfully reinfected.

These thirty-six children, when first seen, gave positive tuberculin reactions, and on roentgen examination their films were normal in nine instances, revealed calcified hilus glands in fourteen cases, and in the remaining thirteen cases of this group demonstrated the

therefore, each child in the group had tuberculosis of first infection exclusively, visualized by roentgen examination in twenty-seven cases and not revealed in the remaining nine instances. Subsequently, these thirty-six cases were followed and repeated examinations made, and after varying periods of observation (table 4) a reinfection type of tuberculosis (consumption) developed in each child in this group. Now nine

of these children are at home on bed rest therapy, five are on pneumothorax collapse therapy, twelve are in sanatoriums and eight have died. Contact with the remaining two patients has been lost.

Two typical cases selected from this general group illustrate the development of phthisis postdating and superimposed on a preexisting primary tuberculosis as it occurred in this entire series of thirty-six children. In the first case (34, table 4) a positive tuberculin reaction was present and four calcified Ghon tubercles were demonstrable by roentgen examination made in 1926 (fig. 1). If primary tuberculous infections confer immunity to consumption, multiple foci of primary disease should award this girl a place in the thoroughly protected class. She remained in good health for four years, but in 1930 a new subapical infiltration appeared on the right (fig. 2). Later this lesion progressed and now, after two years of sanatorium care, hers is classed as a moderately advanced case of consumption. Her multiple protective foci, therefore, have failed to protect her adequately.

The second case (29, table 4) selected from the group gave a positive Mantoux reaction and evidence by x-rays of a small Ghon tubercle at the right apex (fig. 3). As judged by roentgen studies, this patient had less extensive primary tuberculous pathologic changes to rely on for protection than had patient 34. Thirty-seven months later, a serious reinfection type of pulmonary tuberculosis involving the lower half of the right lung developed and now she is under sanatorium care for far advanced tuberculosis. This case illustrates that primary tuberculous infections with single demonstrable lesions cannot be relied on to protect one against consumption.

These two selected cases exemplify what has happened to each of the thirty-six children listed in table 4. Thus, approximately 43 per cent of a group of eighty-four consumptive patients seen at Lymanhurst provide definite proof that their primary tuberculous infections

failed to prevent consumption from developing at some later date. This proportion of failure rises to more than 72 per cent, if to these are added the twenty-five children who had primary and reinfection (adult) types of the disease coexisting when first examined, and lack of detailed information for the remaining twenty-



Fig. 1.—Appearance of chest in 1926: Arrows point to four Ghon tubercles. Tuberculin test positive.

three cases of this group, I suspect, explains why this failure cannot be measured at 100 per cent, a value reported by Opie,¹⁵ who by autopsy found lesions of primary tuberculosis in all cases presenting a reinfection type of tuberculosis (phthisis).

In a study of tuberculosis in several thousand South Africans,¹⁶ tuberculosis was found to develop with

much greater frequency in tuberculin positive than in tuberculin negative native mine boys, and the evidence indicated that allergy was detrimental to these natives. At Lymanhurst to date, no case proved to be consumptive as a direct result of a first infection has been found, and I have yet to see a second crop of tuberculous lesions characteristic of primary tuberculosis develop in an allergic child. When new tuberculous lesions appear in the infected group they do not resolve, calcify and fail to produce symptoms as is characteristic of primary infections but tend rather to spread, cavitate and cause illness, as reinfection lesions commonly do. So far as our evidence goes, every infected child in whom new tuberculous lesions later develop becomes consumptive, and most if not all consumptive patients are derived by reinfection from the allergic group. If these observations, together with those of Opie, have revealed exactly what is needed to become a consumptive, I fear that immunization of children with BCG, which renders them allergic to tuberculin, may duplicate chance primary tuberculous infections by the S strain of human tubercle bacillus not only in failure to protect those uninoculated but also in preparing them to become consumptive at some later date if not protected from reinfections. If immunization with this attenuated organism alters the normal status of the uninfected human body in the same manner as that in which accidental initial contact infections do, some danger exists that a crop of unnecessary consumptive patients may be harvested by its use when these children reach puberty, and later. I hope these immunizations have not denied the recipients the ability to handle a primary infection with the ease that uninfected infants and children do. Several years of observation will be required before this point can be definitely settled.



Fig. 2.—Appearance four years later: The four Ghon tubercles are still present and there is a new parenchymal infiltration in the first interspace anteriorly on the right.

DEBATABLE TERMINOLOGY

Two valuable pamphlets have been issued of late by the National Tuberculosis Association under the titles, "Childhood Type of Tuberculosis" and "Diagnostic Standards," each of which was prepared and approved by groups that include several recognized authorities on tuberculosis. Although I have the utmost respect for the expert opinions contained therein, as well as the greatest admiration for the condensed accomplishment which these brochures present, nevertheless personal experiences tempt me to make inquiry concerning certain points with which they deal. This venture is made with a conviction that frank discussions which portray one's conceptions and interpretations bearing on debatable and unsettled scientific questions are justified. The following comments are offered, therefore, as representing what are considered as reasonable interpretations of observations and experiences obtained at Lymanhurst during the past decade.

15. Opie, E. L.: Pathological Evidence of First Infection in Association with Active Pulmonary Tuberculosis, *Am. Rev. Tuberc.* 10:249 (Nov.) 1924.

16. Tuberculosis in the Gold-Mining Industry, South African Institute for Medical Research, vol. 5, number xxx; reprinted in *Bulletin de l'Union Internationale contre la Tuberculose* 9:214 (July) 1932.

The term childhood type of tuberculosis, which in both pamphlets is clearly defined and recommended for use instead of infantile, juvenile or hilus tuberculosis, apparently is not entirely satisfactory, for this primary form of the disease does develop in adults as well as in children. Would it not be better, therefore, to designate cases of this type as "primary pulmonary tuberculosis" or "first infection type of pulmonary tuberculosis"? Since primary tuberculous infections not infrequently lodge in extrathoracic regions of the body, the appropriateness of classifying all such cases, regardless of where the focus of primary disease is located, under the general heading of "first infection types of tuberculosis" or "primary tuberculosis" suggests itself, under either of which titles, "primary pulmonary tuberculosis" (childhood type by definition in the brochures), "primary retroperitoneal lymph gland," "primary cervical gland," and other types of first infection may be subclassed conveniently as well as correctly, I believe.

The implication inherent in the term "adult type of tuberculosis" is contradicted by the observation that this form of the disease develops in children with appreciable frequency. The term "reinfection type of pulmonary tuberculosis" has certain points that favor its use. It places no age restriction as to when the disease may develop, and it is in agreement with an apparently correct statement, which is present in both pamphlets under consideration, to the effect that "the adult type of pulmonary tuberculosis is considered to be the result of a reinfection from an exogenous or endogenous source." In addition, this nomenclature permits a subclassification of various reinfection forms of the disease under the general heading of "reinfection types of tuberculosis."

PROTECTION FROM REINFECTION

On page 3 of the second and latest edition of the brochure entitled "Childhood Type of Tuberculosis" one finds the statement, "Children with minor tuber-



Fig. 3.—A Ghon tubercle at the extreme apex on the right in a child whose tuberculin test was positive.

culous infections require no special prophylactic care." Since in my series of cases consumption developed eventually in eight children who previously were symptom free and had negative roentgen examinations but positive tuberculin tests, some justification arises, I feel, for advocating special protection from tuberculous reinfection for all children (and adults also) who are allergic to tuberculin, regardless of whether symptoms and primary lesions demonstrable by roentgen study are present or absent. In addition, without necropsy, the selection of patients with infections proved to be minor in significance is difficult.

INTERPRETATION OF A POSITIVE REACTION

In each brochure (page 7 in Childhood Type of Tuberculosis and page 13 in Diagnostic Standards) one reads: "Prolonged exposure of a child to a person with pulmonary tuberculosis usually results in infection, and

excessive infection produces disease." And on page 9 of the first of the pamphlets the statement is made: "A positive reaction to tuberculin always means infection with the tubercle bacilli, but it does not necessarily indicate disease, or whether it is active or latent." If I interpret these statements correctly, they imply that conditions exist at times which permit tubercle bacilli to enter the human body and render it allergic thereafter to tuberculin without simultaneously producing a focus of disease in all cases. To me, this seems to be a rather remarkable statement, and I wonder whether it will withstand the test of investigation. I also wonder what clinical examination or tests reliably identify the individual who has been infected but who has acquired no disease from this experience. The careful postmortem studies of Ghon,¹⁷ which revealed primary tuberculous lesions in from 90

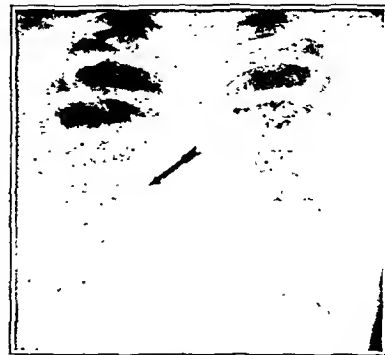


Fig. 4.—Appearance thirty-seven months later. The Ghon tubercle is still present in the right apex and a new extensive parenchymal infiltration has occurred throughout the right base.

to 95 per cent of infected children, located usually within the thorax, strongly indicate that first infections by tubercle bacilli result in the development of diseased areas with a regularity that closely approaches 100 per cent. In view of Ghon's observations, I think one is justified in assuming in general that every child who has a positive tuberculin reaction also has a focus of primary tuberculous disease located probably within the thorax. I also feel that in all cases, regardless of age, in which the Mantoux test is positive, a diagnosis of first infection type of tuberculosis is justified without confirmatory roentgen evidence. In my opinion, the roentgen examination of positive reactors should be made for the special purpose of determining, if possible, whether reinfection types of tuberculosis are present or absent, without according the roentgen study much authority in determining that the individual has or has not primary tuberculosis. This last question is settled by the tuberculin reaction, but incidentally the films may reveal the stage of evolution that the primary lesions, favorably situated and calcified for visualization, have reached at the time of the study.

THE CLASSIFICATION OF TUBERCULOSIS

The development of a scientific scheme for classifying the various first infection types of tuberculosis whose use forces no violation of any known facts relative to the disease process present, by compelling intrusion into the realm of the unknown, provides one of the important and perplexing problems now confronting those interested in tuberculosis. Undoubtedly the limit to which one may proceed with certainty in classifying such cases is determined by the facts that are known pertaining to the individual's disease. To discover these facts, various methods of examination are used, which singly and collectively rarely succeed in revealing the entire truth. The intracutaneous tuberculin, which is very specific as well as highly sensitive, when properly applied, apparently identifies practically

17. Ghon, Anton: Der primäre Lungenherd bei der Tuberkulose der Kinder, Berlin, Urban & Schwarzenberg, 1912.

all infected individuals who, in virtue of the fact that their reactions are positive, can be classified in the general group of first infection types of tuberculosis. Beyond this point one cannot go in their grouping solely on the evidence that the tuberculin reactions are positive. Complete roentgen examinations of all regions of the body permit sifting the general group of first infection types of tuberculosis into the following three subgroups: 1. Cases with negative or normal roentgenograms; approximately 50 per cent of children with primary tuberculosis exclusively fall into this group. 2. Cases with suspicious or inconclusive and indefinite lesions suggestive of primary tuberculosis demonstrable roentgenographically; about 25 per cent of the cases fall into this group. 3. Cases with various types of lesions visualized with sufficient detail by roentgen examination to warrant their identification with reasonable certainty as being truly representative of foci of tuberculous origin; nearly 25 per cent of infected children fall into this group.

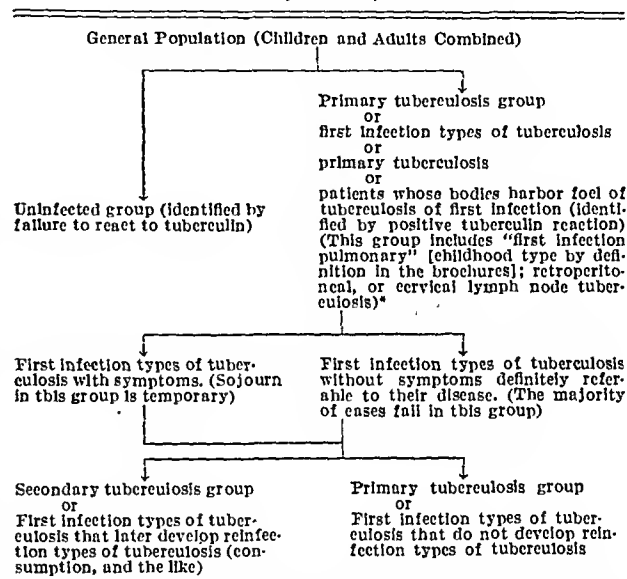
Ghon's painstaking investigations indicate that a resifting of the general group of first infection types of tuberculosis by careful gross and microscopic post-mortem examinations, whose reliability for detecting tuberculous lesions present is definitely superior to that of the roentgen examination, would result in placing from 90 to 95 per cent (rather than only 25 per cent as justified on roentgen evidence) of these first infection cases in a class composed of individuals who have unmistakable, proved primary tuberculous lesions. The residue of this group classed separately on the basis that no lesions were found at necropsy may constitute a class whose exclusion is an artificial, unreal distinction arising from an omission imperfection in the autopsy technic used (failure to make microscopic examination of the entire body). I suspect, therefore, that progressive refinements in methods of examination will tend to reassemble the various subgroups into which one is inclined to place cases of primary tuberculosis on the basis of incomplete information obtained by employment of relatively crude methods (roentgen, for example) into one large general group of which each individual unquestionably harbors one or more foci of primary tuberculous disease.

To subdivide cases of first infection types of tuberculosis into several separate groups on the basis of what the x-rays are able to reveal may have some justification and value even though based on grossly incomplete information, provided the inference that individuals placed in one class differ fundamentally and significantly from those in other groups is true. No evidence is found in the follow-up observations made during the past decade at Lymanhurst to indicate that cases presenting single or multiple large partially or heavily calcified scars show a definitely greater tendency to manifest symptoms or impairment in health referable to primary tuberculosis, or to suffer a different ultimate fate, than do infected children who have small or no lesions demonstrable during life. As far as I have been able to ascertain, all cases of primary tuberculosis are basically identical except that a few cases (from 3 to 4 per cent of infected children) with acute diffuse primary tuberculous pulmonary infiltrations exhibit symptoms which on this basis temporarily distinguish them for a time from the general group of infected cases. After these acute manifestations subside, patients with first infection types of tuberculosis are clinically indistinguishable from one another as a rule and remain so until the day arrives when reinfections transfer a

certain percentage of them to the consumptive group. On the whole, therefore, I see no fundamental reason as well as scant opportunity for attempting to reclassify cases of primary tuberculosis in any great detail.

On careful consideration of the subject, it seems difficult to classify with certainty the 10,000 children examined at Lymanhurst according to any scheme that provides several separate groupings for cases of primary tuberculosis. The limit established by the point dividing the known from the unknown facts concerning the individual case greatly restricts elaboration. The information gleaned from tuberculin tests, repeated roentgenograms and physical examinations continued over a period of several years on these children, however, seems to permit their classification according to the plan outlined in table 5.

TABLE 5.—Classification of Tuberculosis



* Note may be made in these cases relative to the appearance of lesions found, but assumptions that visualized conditions provide reliable evidence that these cases differ basically and require grouping separate from others in the general first infection group apparently are unwarranted. The classification outlines roughly the stages of evolution of tuberculosis as it occurs in man.

The Lymanhurst cases do not, however, seem satisfactorily amenable to separate grouping into the observation, the manifest disease and the apparently healed groups proposed for classification of the childhood type of tuberculosis in Diagnostic Standards. I feel that in accordance with this proposal my entire series belongs properly in the group of observation cases, in view of the possibility that they may later develop some reinfection type of tuberculosis. For this reason they never cease to be observation cases. Some justification also exists for placing our entire group of cases in the manifest disease class, for the reason that I suspect necropsies, for instance, would make manifest the diseased areas actually present which escape detection by roentgen and other examinations combined. I am reluctant also to exclude these infected children from the manifest disease group, owing to the conviction I entertain that the positive tuberculin reaction alone, and without additional confirmatory evidence, has made the presence in their bodies of one or more foci of primary disease indirectly manifest. Furthermore, I fail to comprehend how one can justly separate these children into observation and manifest disease cases on the basis either that the potentialities inherent

in their discovered and undiscovered areas of disease differ in various patients or that the alterations of the normal immune status produced in their bodies by first infections are essentially dissimilar.

At no time have I found a case that could be classed as apparently healed with any degree of assurance that the classification is correct. Certain Lymanhurst children with primary tuberculosis exclusively have remained in apparently normal health for various periods up to ten years before consumption finally developed (table 5) and to exonerate their old primary foci of responsibility for the newly developed disease seems impossible. This experience shows how treacherous a presumptive diagnosis "apparently healed" may prove to be. Microscopic studies also indicate that to classify a case of primary tuberculosis during life as "apparently healed" may be erroneous in many instances. For example, Professor Robertson of the Mayo Clinic (cited by Myers¹⁸) says: "I am very greatly impressed with the microscopic study of these apparently healed lesions. Very many of them show evidence of some activity histologically and I am steadily strengthened in the opinion that the tuberculous lesion in most instances constitutes a menace of renewed activity as long as the individual may live." Professor Robertson is inclined to believe that the foregoing statement applies particularly to the first infection type of tuberculosis, including the involvement of the lymph nodes at the root of the lungs. Dr. Robertson also states that he frequently finds calcium deposits, caseous material and activity histologically all in one lesion. Apparently little is to be gained by providing a special group for apparently healed patients who, like their companions placed elsewhere in observation and manifest disease classes in Diagnostic Standards, continue throughout life to need close observation and to be confronted with the common danger of developing consumption if successfully reinfected from exogenous or endogenous sources. I feel, therefore, that the apparently healed group should be deleted from Diagnostic Standards, not only for reasons previously mentioned but also on the basis of the truth I feel exists in the statement made in this brochure that "cases with apparently healed lesions may have other concealed caseous nodes from which tubercle bacilli may be disseminated."

TREATMENT FOR PRIMARY TUBERCULOSIS

Opinions vary as to how cases of primary tuberculosis should be treated. Open air or open window schools, preventoriums and summer camps or their equivalent are recommended in the brochures for cases under observation. Lymanhurst is no longer an open window school to the degree it was ten years ago. Now, instead of providing wide open windows and cool rooms that required wearing eskimo wraps, windows are only partially raised, sufficient merely to provide an atmosphere that is comfortable with respect to temperature, moisture and circulation. This change was made when experience indicated that the air requirements of a child with primary tuberculosis were not essentially different from those of uninfected children. Summer camps provide a pleasant outing for infected children, but I have failed to discover anything of additional basic curative value in them. Admission to preventoriums unfortunately separates a child from a home environment; thus this type of treatment must afford something needed but unobtainable at home to be justified.

Exactly what this need unobtainable outside a preventorium consists in is not clear to me.

For the manifest disease cases, sanatorium care or its equivalent is recommended in Diagnostic Standards whether symptoms or physical signs are present or absent. The sanatorium can give these children all forms of treatment needed for the first infection type of tuberculosis, which, when complete, include a well balanced liberal diet, adequate vitamin intake, alpine light exposures (?) and rest. Many sanatoriums and preventoriums, however, fail to give the infected child the most important of all needs; namely, protection from exposure to consumptive patients. Very few institutions practice rigid contagious technic and exclude consumptive patients from their professional and non-professional staffs. In my opinion, ideal conditions exist if up-to-date diagnostic centers and certified homes rather than open air schools, summer camps, preventoriums or sanatoriums are provided. Diagnostic observation centers and certified homes afford means for diagnosis as well as ample facilities for individual treatment in a safe and wholesome environment without necessitating the omission of any therapeutic measure proved to be of value in the treatment of primary tuberculosis. From the experience at Lymanhurst, I have been unable to find where need exists for sanatorium treatment of children with first infection types of tuberculosis. I think Lymanhurst discharges its obligation fully in the care of these children without the aid of an institution of this type. To me, the use of certified homes seems superior to resorting to institutional care.

The foregoing comments portray what seem to be reasonable interpretations of observations made possible by follow-up studies extending over a period of several years on a few thousand children afflicted with primary tuberculosis. In the light of this experience, which I trust has not been misleading, I believe that some revision of the two brochures now being issued by the National Tuberculosis Association will enhance their value.

CONCLUSIONS

1. The present paper is based on observations on eighty-four children found in a series of more than 10,000 cases examined and followed up during the past decade at Lymanhurst. These eighty-four children included certain patients who had reinfection pulmonary tuberculosis (consumption) when first examined, as well as other children in whom phthisis developed during the period of observation.

2. Of this group, thirty-six children (approximately 43 per cent) had primary tuberculosis exclusively for various periods up to ten years and then developed the reinfection type of pulmonary tuberculosis (consumption). Primary tuberculous infections (which produce allergy to tuberculin), therefore, do not prevent consumption from developing at some later date.

3. Twenty-five children (approximately 30 per cent) had primary or reinfection pulmonary tuberculosis coexisting when first examined. I interpret these observations as contributing circumstantial evidence that initial infections by *Mycobacterium tuberculosis* do not confer an immunity that prevents consumption. Apparently the opinion that infected individuals are protected must be abandoned until indisputable proof to support this contention is found.

4. At Lymanhurst, no child allergic to tuberculin has been found during the past decade in whom a second crop of lesions typical of primary tuberculosis has

18. Myers, J. A.: The Tuberculin Test, Minnesota Med. 15:26 (Jan.) 1932.

developed. Apparently the human body can experience the benign primary form of the disease only once.

5. When new tuberculous infiltrations appear in the lungs of children who previously had positive tuberculin reactions, these newly developed lesions are roentgenologically and clinically characteristic of reinfection pulmonary tuberculosis (phthisis). Apparently, patients with primary tuberculosis become consumptive if reinfections occur in dosage sufficient to produce intrapulmonary lesions. This applies to cases of primary tuberculosis whether symptoms and lesions demonstrable roentgenographically are present or absent.

6. Follow-up studies over a period of ten years at Lymanhurst indicate that primary tuberculous infections are distinctly detrimental in that they alter the normal resistance to tuberculosis present in the uncontaminated human body in such a manner that, instead of again being able to experience the benign primary type of tuberculosis, the patient is doomed thereafter to develop consumption if successfully reinfected from exogenous or endogenous sources. The only method by which consumption can be prevented is through the prevention of tuberculous infections.

7. Active immunization against tuberculosis with attenuated bacilli may not be a safe procedure if this method immunologically duplicates the changes that accidental human contact infection produces.

8. A plan of classification for various types of tuberculosis together with comments relative to revisions in two brochures distributed by the National Tuberculosis Association is submitted, each of which seems to conform with conservative interpretations of the observations made at Lymanhurst during the past ten years.

953 Medical Arts Building.

THE USE OF AUTOLYZED LIVER IN THE TREATMENT OF PERNICIOUS ANEMIA

A PRELIMINARY CLINICAL REPORT

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AND

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In a previous communication we¹ reported the results of several observations, suggesting that autolysis markedly increases the potency of liver in the treatment of pernicious anemia. Further work has substantiated the preliminary observations, and, because of their important relation to practical liver therapy and theories regarding the possible nature of the beneficial agent, the results of treatment of thirteen cases of pernicious anemia with autolyzed liver are here reported.

PREPARATION AND METHOD OF ADMINISTRATION

Fresh beef liver obtained from the slaughter house was ground and fiftieth-normal hydrochloric acid was added in the proportion of 1,000 Gm. of minced liver to 5,000 cc. of fiftieth-normal hydrochloric acid.

From the Departments of Medicine and Physiological Chemistry, University of Pittsburgh School of Medicine.

In this investigation the following physicians cooperated by supplying clinical material: Drs. J. D. Heard, A. P. D'Zmura, H. B. Gardner, G. O. Smith, J. H. Barach, Glenn Heilman, Marlin Heilman, E. S. Duncan, W. B. Gordon, F. A. Evans, G. C. Weil, G. J. Kastlin, W. A. Nealon, R. M. Entwistle, E. P. Griffiths, J. S. Logan, James Balph, E. W. Willets, H. G. Schleiter and R. R. Snowden.

1. Herron, W. F., and McEllroy, W. S.: Autolyzed Liver Therapy in Pernicious Anemia, *Science* 76: 127 (Aug. 5) 1932.

Twenty-five cubic centimeters of chloroform per kilogram of liver was added as a preservative. The mixture was thoroughly shaken, placed in an incubator at 37 C. and allowed to undergo autolysis for an average period of ten days. It was shaken daily during the period of incubation. At the end of ten days the undigested material was removed by filtration. This filtrate contains the active material and was used as such or after concentration to varying degrees even to the point of dryness. In several cases this whole unfractionated filtrate was used as indicated in the accompanying table. During the process of concentration, which was conducted under reduced pressure to keep the temperature below 55 C., a gradual precipitation of the less soluble materials occurred. Repeated filtration at various stages thus provided a simple method of fractionation. We have made observations on the chemical nature and therapeutic activity of the whole material and of the various fractions, administered orally with fruit or vegetable juices. The present report deals primarily with the therapeutic activity of the whole unfractionated material contained in the original filtrate. Preparations of the most highly concentrated solutions were made for intramuscular use by adjusting the reaction to neutrality and sterilizing it by boiling and Berkefeld filtration. For comparison, dosage was expressed in terms of grams of liver from which the material was prepared. The autolyzed liver was administered in cases of pernicious anemia otherwise untreated, and observations were made on the reticulocytes, erythrocytes, hemoglobin, platelets, bleeding and coagulation time. Its effects on the other features of pernicious anemia such as neurologic symptoms, appetite, strength and weight were also determined. When possible, the patients were hospitalized and the laboratory data obtained, each hospital using its regular technic. In some instances the patients were under our observation long enough for us to observe only the initial response; in others we were able to note also the effect of maintenance treatment.

COMMENT

The great individual variation in the dosage requirement in pernicious anemia is well known and has been clearly stated recently by Minot.² However, for purposes of comparison, the following amounts of liver would seem to represent the approximate requirement in uncomplicated cases: Riddle and Sturgis³ report that the equivalent of approximately 3,000 Gm. of liver, when fed in a single massive dose, was required to induce a maximal reticulocyte response. The generally accepted dosage required to restore the blood levels to approximately normal is about 250 to 300 Gm. of liver pulp daily. When liver extracts⁴ are given orally, from 400 to 600 Gm. of liver equivalent represents the daily requirement. When intramuscular preparations are used, it is customary to administer about 400 Gm. of liver equivalent in the first ten days, followed by a maintenance dosage of about 100 Gm. each week.⁵ The intravenous dosage requirement appears to be approximately the same as the intramuscular.⁶

2. Minot, G. R.: The Importance of the Treatment of Pernicious Anemia on a Quantitative Basis, *J. A. M. A.* 99: 1906 (Dec. 3) 1932.

3. Riddle, M. C., and Sturgis, C. C.: The Effect of Single Massive Doses of Liver Extract in Pernicious Anemia, *Am. J. M. Sc.* 180: 1 (July) 1930.

4. Murphy, W. P.: The Parenteral Use of Liver Extract in Pernicious Anemia, *J. A. M. A.* 98: 1051 (March 26) 1932.

5. Murphy, W. P., Connery, J. E., and Goldwater, L. J.: Parenteral Use of Liver Extract in Treatment of Pernicious Anemia, *J. A. M. A.* 98: 1060 (March 26) 1932.

6. Fouts, F. J., and Zerfas, L. G.: Use of Liver Extract Intravenously, *Arch. Int. Med.* 50: 27-36 (July) 1932.

It will be observed that in the later cases here reported reticulocyte responses, followed by erythrocyte and hemoglobin increases, occurred after the ingestion of 400 Gm. of autolyzed liver during the first ten days of

Effect of Oral Administration of Autolyzed Liver

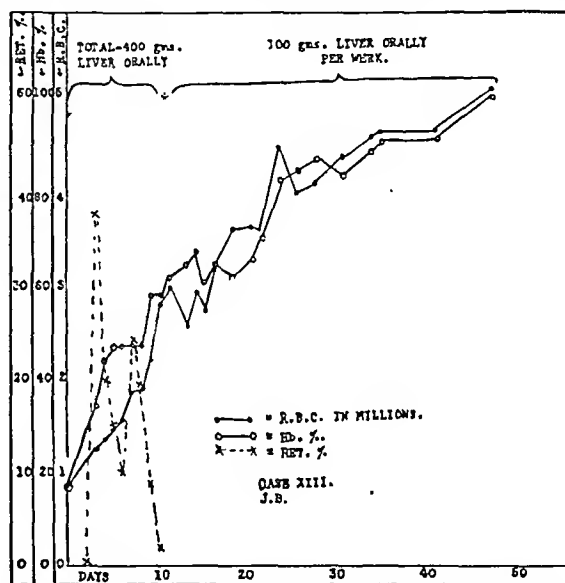
Case	Red Blood Cells, Millions	Hemo-globin, per Cent	Days After Treatment*	Reticu-les, per Cent	Dosage, Gm. of Auto-lyzed Liver†
1	1.70	34	0	1	600 A
	2.04	60	37	11	250 B
	2.36	65	58	..	250 B
	2.17	70	71	..	
2	2.89	63	0	1	810 A in 4 days
	3.32	86	35	13	230 B
	3.49	94	59	1.5	230 B
3‡	0.73	22	0	1	750 A in 3 days
	1.30	36	9	22	430 B in 2 days
	2.40	64	33	..	60 I. M. in 6 days
	2.70	70	57	..	150 B total from day 120 to 150
	4.60	100	170	..	200 B total from day 155 to 170
4	1.80	45	0	1.5	450 B in 2 days
	3.20	68	19	8	800 B in 4 weeks
	3.10	62	41	2.5	120 A
	4.60	98	196	..	480 A in 10 days
6	1.30	31	9	1	400 B in 2 days
	1.79	38	7	20	
	1.10	29	14	..	5 I. M.
	0.97	20	18	2	7.5 I. M.
	1.80	50	25	20	250 B
	2.80	59	32	..	250 B
6	0.05	21	0	1	600 B in 2 days
	0.75	21	4	0.5	
	4.40	94	6	10	
			7	20	
7	3.10	70	9	2	400 B in 2 days
	3.90	84	10	8	
	4.40	94	17	..	
8	2.50	35	0	..	20 I. M. in 20 days
	2.60	35	5	..	
	3.00	45	8	..	
	4.10	75	20	..	
9	2.80	65	0	..	60 A
	3.00	80	19	..	60 A
	3.60	85	29	..	
	3.80	85	43	..	100 A per week
	3.90	90	62	..	
	4.10	90	84	..	
	4.40	95	105	..	
10	3.18	72	0	..	190 A
	4.41	79	18	..	
	3.60	72	54	..	100 A per week
	4.10	82	71	..	
11	3.60	76	0	..	105 A per week
	4.60	87	12	..	
	4.40	92	18	..	
	4.80	98	23	..	
	5.10	104	31	..	
12	3.04	81	0	..	190 A
	4.20	90	36	..	50 A
	4.30	90	50	..	100 A per week
	4.50	94	56	..	
	4.80	100	71	..	
13	0.82	17	0	1.4	400 A in 10 days
	1.30	34	1	38	
	1.80	47	6	24	
	3.00	62	10	2	100 A per week
	3.60	71	20	..	
	4.00	85	23	..	
	4.70	92	31	..	
	4.80	95	42	..	
	5.10	100	47	..	

* In this column, zero (0) day indicates the day treatment was started.

† In this column the letter A indicates that the unfractionated material was given; the letter B indicates that the highly concentrated and fractionated material was given; the numeral indicates the number of grams of fresh liver from which the autolyzed liver was prepared; I. M. indicates intramuscular injection.

‡ Owing to her critical condition, this patient received a transfusion of 500 cc. of blood on day 5 and 2 cc. of liver extract 343 (N. N. R.) parenterally on days 6 and 7.

treatment, followed by a maintenance dosage of material derived from 100 Gm. of liver each week. This indicates that the autolyzed liver, when given by mouth, has a potency approximating that of other liver preparations when given intramuscularly or intravenously (case 13). In this connection, it is of interest that in several cases we have administered the autolyzed liver intramuscularly and have obtained from material derived from 10 Gm. of liver a response equal to that obtained from other preparations representing 100 Gm. The patients in our series who showed the best response were those who received by mouth the crude unfractionated filtrate. This was especially noticeable in the degree of improvement of the neurologic symptoms, weight, strength and blood platelets. Although the highly fractionated material induced an initial response, a sustained rise in cells and hemoglobin to the normal levels was best obtained when the whole filtrate was used. We believe, therefore, that too high a degree of fractionation may be undesirable in the preparation of liver extracts. At present there is a tendency to replace



Effect of treatment on red blood corpuscles, hemoglobin and reticulocytes in case 13.

oral therapy by the parenteral use of highly refined preparations. We agree with Conner⁷ and Musser that this is irrational as a routine method and should be used only when oral therapy is not practical. It is apparent that the smaller dosage of autolyzed liver, owing to its greater potency, carries with it marked economic advantages.

In our description of the method we indicated that the material was concentrated under reduced pressure. This was done to prevent the temperature from rising above 55 C., as the potent material appeared to be partially destroyed by prolonged heating above this point. Although the dried material can be administered more conveniently, concentration is not essential, as the crude unconcentrated filtrate was found to be palatable and effective.

We have under way a detailed investigation of the chemical and therapeutic properties of the various fractions obtained as described. Studies are also being made of materials prepared by the autolysis of other glands

7. Conner, H. M.: Injection of Liver Extract in the Treatment of Pernicious Anemia, J. A. M. A. 99: 614 (Aug. 20) 1932.

and tissues. The results of these investigations in pernicious anemia and other conditions will be reported later.

CONCLUSIONS

1. Autolysis markedly increases the potency of liver.
2. The oral dosage requirement of autolyzed liver approaches the intramuscular requirement of other liver preparations.
3. The method described provides a simple means of fractionation, facilitating study of materials contained in liver and other organs and tissues.

HYPOPROTEINEMIA

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In 1891, Csáthy¹ showed that there was a decrease in the total plasma proteins in certain forms of nephritis and that the albumin fraction was lower than the globulin. The significance of this observation was lost until Epstein,² in a series of studies, confirmed it and found it applicable only in those forms of renal disorders then designated as "nephrosis," a term coined to connote diseases of the kidney that are not "inflammations." The dominant clinical evidence of "nephrosis" is dropsy. Epstein held that the dropsy was the result of the loss of protein by way of the kidneys and was associated with hypoproteinemia. In order to explain the relation of the hypoproteinemia to the dropsy, he applied the neglected law of Starling. Starling showed that the exchange of water between the blood and the body tissues depended on a balance between the colloidal osmotic pressure of the plasma proteins and the hydrostatic pressure within the capillaries. Epstein's speculations, after many vicissitudes, have now been confirmed by precise observations and have explained many clinical observations on dropsies other than the "nephrotic" which had hitherto been regarded as obscure in origin.

CLINICAL CONDITIONS ASSOCIATED WITH HYPOPROTEINEMIA

Hypoproteinemia may result from:

A. Loss of protein:

1. By way of the kidneys.
2. By the intestinal tract.
3. By anasarca.
4. By loss of blood.

B. Deficient formation or destruction of plasma protein.

C. Insufficient intake of protein.

HYPOPROTEINEMIA OF RENAL ORIGIN

The term "nephrosis," which was supposed to clarify the classification of renal disorders, has failed to do so and has rather confused the issue. At present "nephrosis" is best interpreted as a syndrome characterized by marked albuminuria, general edema, hypoproteinemia with inversion of the albumin-globulin ratio, lipemia and, usually, a lowered basal metabolism. Since in many instances the blood pressure was normal, Epstein originally conceived the underlying pathologic lesion as a nephrosis in its original sense; namely, a parenchymatous "degeneration," a non-inflammatory

process.³ Indeed, in many cases that came to autopsy the degenerative lesion known as lipoid nephrosis was found. Further observation showed that the syndrome had other backgrounds in morbid anatomy. In fact, pure lipoid change was the least common lesion associated with this syndrome; by far the most common was a subacute or chronic glomerulonephritis and, less frequently, an amyloid kidney. Without a consistent background in pathology, nephrosis loses its individuality as a disease.

Despite the lack of a strict clinical and pathologic correlation, these anatomic lesions have one thing in common; namely, a loss of protein by way of the kidneys. The amount of albumin lost by the urine may vary considerably from 1 to 60 Gm. of protein per liter a day (Leiter⁴), of which, according to Hiller, Van Slyke and McIntosh,⁵ from 85 to 90 per cent is albumin while only from 10 to 15 per cent is globulin. How great a loss of renal protein is requisite to produce a hypoproteinemia is difficult to determine, but Linder, Lunsgaard and Van Slyke⁶ believe that no appreciable hypoproteinemia develops with a loss of less than 1 Gm. of protein per liter a day. Prognostically, therefore, a patient who passes only a so-called trace of albumin in the urine will not develop the nephrotic syndrome.

In regard to lipoid nephrosis, it is not certain how far the renal lesion is the cause or the result. The lipoid infiltration is probably the result of the lipemia, for such infiltrations have been produced not only in experimental plasmapheresis by Leiter,⁷ Barker and Kirk,⁸ Shelburne and Egloff,⁹ and Kumpf,¹⁰ in which the blood lipoids increase, but also in the nephrotic glomerulonephritides in which lipemia is present. No consistent observations are recorded as to how far the degeneration of the renal epithelium is the cause or consequence of the loss of protein. The fact that albuminuria is not caused by hypoproteinemias of extrarenal origin or in plasmapheresis indicates in all probability that the degeneration is not the result; nor can one unqualifiedly say that such degenerations are the cause because purely symptomatic therapy by the high protein low fat diet recommended by Epstein frequently cures the malady. It is for this reason that Epstein regarded the disease as metabolic in origin and suggested the term "diabetes albuminuricus" as best expressing the nature of the disease.

The degree of hypoproteinemia in the nephrotic syndrome varies, reaching as low as 2.5 mg. per hundred cubic centimeters of plasma (normal 7.5 per cent), and there is usually a fair correlation between the amount of protein lost in the urine and the blood proteins. The critical level at which edema becomes manifest depends not so much on the total protein as on the albumin fraction. Since about nine tenths of the total urinary loss is albumin, the albumin fraction in the blood becomes considerably reduced, so that the normal albumin-globulin ratio is lowered and may even be

3. Since the term "inflammation" varies so widely in its interpretation, it seems to me that it would clarify matters considerably to drop the term entirely and substitute simply descriptions of the morphologic reactions to injury. This would also eliminate the unsatisfactory term "degeneration."

4. Leiter, Louis: *Medicine* 10: 135 (May) 1931.

5. Hiller, Alma; Van Slyke, D. D., and McIntosh, J. F.: *J. Clin. Investigation* 4: 233 (June) 1927.

6. Linder, G. C., Lunsgaard, C., and Van Slyke, D. D.: *J. Exper. Med.* 39: 887 (June) 1924.

7. Leiter, Louis: *Proc. Soc. Exper. Biol. & Med.* 26: 173 (Nov.) 1928.

8. Barker, M. H., and Kirk, E. J.: *Experimental Edema (Nephrosis) in Dogs in Relation to Edema of Renal Origin in Patients*, *Arch. Int. Med.* 45: 319 (March) 1930.

9. Shelburne, S. A., and Egloff, W. C.: *Experimental Edema*, *Arch. Int. Med.* 48: 51 (July) 1931.

10. Kumpf, A. E.: *Experimental Edema and Lipemia Produced by Repeated Bleeding*, *Arch. Path.* 12: 415 (March) 1932.

1. Csáthy, A.: *Deutsches Arch. f. Klin. Med.* 48: 358, 1891.

2. Epstein, A. A.: *Am. J. N. Sc.* 154: 638 (Nov.) 1917.

inverted. The lipoids in the blood are nearly always increased and may even pass into the urine as double refractile bodies.

The following case of hypoproteinemia of renal origin is reported because it demonstrates the value of determining the total plasma protein in the interpretation of the clinical observations:

CASE 1.—R. B., a woman, aged 29, admitted to Dr. B. S. Oppenheimer's service, March 4, 1932, had rheumatism ten years and two years previously. Five months before admission she had fever, dyspnea and chills. Two weeks before she noted tenderness of the finger tips. Examination revealed an aortic insufficiency with a large heart. The liver was three fingerbreadths below the free border; the spleen was palpable. There was marked pitting edema of the legs and over the sacrum, and there was fluid in both sides of the chest. The hemoglobin was 45 per cent. The urine boiled almost solid with albumin and contained many hyaline and granular casts. The blood culture was positive for *Streptococcus viridans*, and the diagnosis of subacute bacterial endocarditis was established. But the interpretation of this case was not entirely clear. The anasarca and large liver suggested the presence of a myocardial insufficiency, a circumstance highly exceptional in active subacute bacterial endocarditis. This suspicion was apparently confirmed by the electrocardiographic tracings, which showed in addition to a left ventricular preponderance an inverted T₁ and a PR interval of 0.21 second. One week later the PR interval was 0.25 and in the following week was 0.22, intervals that were above the upper limits of normal. Clinically, however, the patient showed none of the usual accompaniments of myocardial failure, and another explanation for the edema was sought. In view of the intense albuminuria, a hypoproteinemia was looked for and found to be 5.4 Gm. per hundred cubic centimeters (Wu method), of which the albumin was 3.4 per cent and the globulin 2.0 per cent. The cholesterol was 170 mg. To ascertain whether the edema was due to the hypoproteinemia, the patient was placed on a high protein diet. In a few days the edema disappeared and a blood plasma protein determination at this time showed a total protein of 6.1 per cent, of which the albumin was 4.3 and the globulin 1.8.

HYPOPROTEINEMIA DUE TO LOSS OF PROTEIN FROM THE INTESTINAL TRACT

Edema occurring in the course of severe gastroenteritis with diarrhea in infants is not uncommonly observed.¹¹ The cause of the edema was obscure to these writers,¹¹ whose observations antedated present knowledge of the relation of low plasma protein to edema. Ashby, nevertheless, recognized that the edema disappeared on a diet rich in protein and poor in carbohydrate. Quantitative studies on the blood plasma proteins in cases of diarrhea with edema are up to the present very few. It is therefore pertinent to report the following cases:

CASE 2.—Mrs. G., aged 50, a patient of Dr. Asher Winkelstein, to whom I am indebted for the privilege of reporting this case, had three years previously had a severe attack of nonspecific ulcerative colitis with fever and bloody diarrhea, which lasted six months. She was well until September, 1931, when the disease recurred. At this time she developed a large ischio-rectal abscess, which broke into the rectum, so that the patient had incontinence with constant drainage of bloody and purulent stool. In the course of a few months she became progressively worse. She lost weight, and the number of movements a day averaged between ten and twenty. Toward the end of the illness she developed a pitting edema of the lower extremities and back. Her total serum proteins at that time were 5.2 per cent, of which the albumin fraction was 3.1 per cent and the globulin 2.1 per cent. She died some weeks later of toxemia and exhaustion.

CASE 3.—R. P., a woman, aged 24, admitted to Dr. B. S. Oppenheimer's service, April 18, 1931, had had a diarrhea for seven months, which became bloody in the past week. The stools were frankly bloody and very frequent. The sigmoidoscope showed an ulcerative colitis. Roentgen examination revealed no haustra in the entire colon. The patient had an irregular fever. June 23, a pitting edema of the feet was noticed. The total blood serum protein taken on this date was 4.5 per cent, of which the albumin was 2.6 per cent and the globulin 1.9 per cent. The cholesterol was 210 mg. per hundred cubic centimeters. She was put on a high protein diet and within two weeks the edema disappeared. The blood protein at this time was 5.6 per cent, with the albumin 3.4 per cent and the globulin 2.2 per cent. July 13, the total protein was 6 per cent, of which the albumin was 3.7 per cent and the globulin 2.3 per cent. The patient apparently improved for a while, but in August she had a relapse; an ileostomy was done, but the patient died four days later.

CASE 4.—F. P., a woman, aged 48, admitted to Dr. B. S. Oppenheimer's service, Nov. 7, 1931, had had three operations on the rectum, eighteen years, five years and five months before. She had a diarrhea of many years' duration, occasionally tinged with blood. She said that her legs, the lower part of the back and the abdomen had been swollen for the past three months. She revealed an extensive stricture of the rectum with marked perirectal thickening, and roentgenograms showed a communication between the ileum and the sigmoid flexure. There was marked pitting edema of the legs and back and some ascites. The urine showed consistently heavy quantities of albumin. The edema and the ascites were ascribed to a hypoproteinemia the result of either long standing diarrhea or amyloidosis. The congo red test, which showed only 29 per cent retention, seemed to point against amyloidosis. At all events the total plasma protein, November 10, was 5.6 mg. per hundred cubic centimeters, of which the albumin was 2.0 per cent and the globulin 3.6 per cent, an almost complete inversion. The proteins were increased in the patient's diet with subsidence of the edema, and on December 7, the total proteins were 5.8 mg. per hundred cubic centimeters, of which the albumin was 2.0 per cent and the globulin 3.8 per cent. A colostomy was done, Jan. 9, 1932, but the patient died one week later. The autopsy showed a proctitis and proctocolitis with multiple fistulas between the sigmoid flexure and the ileum. Both kidneys showed amyloid degeneration.

It was impossible in this case to prove to what extent the hypoproteinemia was the result of the loss of protein through the stool or by way of the amyloid kidneys. At all events the patient lost protein through both sources and, although the total plasma protein was not greatly below the normal limits, the albumin fraction was unusually low.

To what extent the loss of proteins in patients with diarrhea is the result of the exudation of serum into the intestine and how much is due to the loss of blood protein that usually accompanies an ulcerative colitis is, for clinical purposes, unimportant. That the loss of blood alone can account for hypoproteinemia is evidenced by some cases which I shall report in a subsequent portion of the paper, in which I shall describe hypoproteinemia resulting from repeated small bleedings into the intestine from gastric and duodenal ulcers.

HYPOPROTEINEMIA IN ASCITES

Although serum in the abdominal cavity is, strictly speaking, within the body, as far as the economy is concerned it is extracorporeal. The fact that hypoproteinemia occurs in the presence of large ascitic collections is well known. One sees it repeatedly in the ascites following cirrhosis of the liver. I saw a fine example in a case of Gaucher's disease with coarse nodular cirrhosis. One wonders in such a case whether the edema of the lower extremities, a not uncommon

11. Wagner, E.: *Deutsches Arch. f. klin. Med.* 41: 509, 1887.
Chapin, H. D.: *Arch. Pediat.* 31: 5, 1914. Hume, W. E.: *Brit. M. J.* 2: 478 (Sept. 2) 1911. Ashby, H. T.: *Practitioner*, May, 1914, p. 686.

finding in cirrhosis of the liver with ascites, is not due to the hypoproteinemia rather than to the compression of the intra-abdominal veins, the explanation hitherto offered. It would be interesting to note the effect of a high protein diet on the edema of the lower extremities in such a case.

HYPOPROTEINEMIA DUE TO LOSS OF BLOOD

It is obvious that any appreciable loss of blood is followed by hypoproteinemia. Coincidentally there is a lipemia.¹² When plasmapheresis is performed, edema is noted when the plasma proteins are reduced to 3 Gm. per hundred cubic centimeters.

Clinicians are familiar with the general or local edema that is occasionally seen in severe chronic anemic states. The cause of this edema has been ascribed to various factors: to the hydremic state of the blood, to an increased capillary permeability, and to myocardial insufficiency; but in view of present knowledge concerning the sequential relation of edema to hypoproteinemia, it seemed pertinent to determine whether hypoproteinemia occurred in edematous anemic states. As far as I can gather, there has been no reported systematic study of this work. The following case reports will therefore be of interest:

CASE 5.—C. W., a man, aged 49, admitted to Dr. B. S. Oppenheimer's service, Feb. 23, 1932, had been in Mount Sinai five years previously for abdominal pain and a mass (?) in the right upper quadrant. The hemoglobin at that time was 80 per cent. A roentgenogram of the gastro-intestinal tract and the barium enema were reported as showing a distorted duodenal bulb. After a few days the patient was discharged feeling well. The day before the present admission he felt weak and dizzy and vomited a large quantity of blood. He had also passed blood by rectum three times. The hemoglobin was 32 per cent. The liver was palpable just below the free border. The spleen was just palpable. With rest and a Sippy diet he stopped bleeding and the guaiac reaction in the stool became negative. February 29, the hemoglobin was 38 per cent, the red blood count was 2,510,000, and the white blood count was 5,050. On March 11, edema of the feet appeared with some puffiness of the face and some ascites. The blood plasma protein taken three days later showed 5.4 per cent Gm. of protein, of which the albumin was 3.5 per cent and the globulin 1.9 per cent. The patient was put on a high protein diet and the blood plasma rose only to 5.5 Gm. per hundred cubic centimeters, with 3.3 per cent albumin and 2.2 per cent globulin. The edema and ascites disappeared. A roentgenogram of the gastro-intestinal tract at this time again showed a deformity of the duodenal bulb. A later gastro-intestinal series showed a normal bulb. March 21, the hemoglobin was 38 per cent. He was discharged a few days later. Despite a low acid Rehfuess curve the diagnosis of duodenal ulcer was regarded as most probable.

This case offers much of interest from a number of points of view. In the first place, the rapid response of the edema to the high protein diet despite the persistence of the rather marked anemia proved that the edema and ascites were the result of the hypoproteinemia and not of the anemia. In the second place, the hypoproteinemia and the response to treatment were of some diagnostic value because the ascites together with the slightly enlarged liver and spleen led to the suspicion that the patient had hepatic cirrhosis. In view of the sequence of events, this is now considered unlikely.

CASE 6.—L. S., a man, aged 60, admitted to Dr. George Bachr's service, April 3, 1931, had had diabetes for five years, which was controlled by 40 units of insulin a day. He had symptoms of duodenal ulcer, and a gastro-intestinal series taken at that time showed a constantly irregular bulb and dilatation of the stomach with pyloric obstruction.

He was readmitted, Jan. 22, 1932, to Dr. Leo Kessel's service. Three days previously he vomited bright red blood. He was drowsy and the breath smelled of acetone. The hemoglobin was 90 per cent, the blood sugar was 185 mg., and the urine contained abundant acetone. The stools became tarry and within a few days the hemoglobin sank to 26 per cent. Three transfusions raised the hemoglobin to 54 per cent. February 17, a gastro-enterostomy was performed. February 27, the hemoglobin was 27 per cent and a pitting edema was noted in the lower extremities and over the sacrum. A dose of salyrgan led to the disappearance of the edema. March 19, the total serum protein was 5.5 Gm. per hundred cubic centimeters, of which 3.6 per cent was albumin and 1.9 per cent globulin. Slight edema was still present at this time. March 23, he was discharged with a hemoglobin of 47 per cent. The diagnosis was duodenal ulcer.

CASE 7.—E. R., a woman, aged 69, admitted to Dr. B. S. Oppenheimer's service, May 15, 1932, had had diarrhea with about six movements a day for six weeks before admission. Four weeks before she began to have edema of the legs, dyspnea, epigastric distress and precordial pain radiating to the left side of the back. She was very pale, and the lingual mucous membrane showed some atrophy. There were râles at both lung bases. The heart was enlarged to the right and to the left, and there was a rough systolic murmur at the apex and frequent extrasystoles. The abdomen showed a marked distasis, and a globular mass, the size of a peach and slightly tender, was found in the right lower quadrant. There was marked pitting edema of both legs and in the lumbosacral region. The hemoglobin was 24 per cent, the red blood count 2,700,000, the white blood count 5,200. The color index was 0.6. The venous pressure was 10 cm. of water. The blood urea nitrogen was 11 mg. per hundred cubic centimeters. The blood sugar was 125 mg. and the cholesterol was 185 mg. The stools gave a marked guaiac reaction for blood. In view of the edema, the history of dyspnea, the evidences of hypostasis, the enlargement of the heart and the suggestive history of stenocardia, the possibility of a myocardial insufficiency was considered. This was rendered unlikely by the finding of the normal venous pressure. A total blood plasma determination showed a total protein of 4 Gm. per hundred cubic centimeters, of which the albumin was 2.5 per cent and the globulin 1.5 per cent. A roentgenogram of the colon showed a malignant tumor of the cecum.

The edema in this patient was undoubtedly due to the hypoproteinemia and not to myocardial insufficiency.

To what extent the hypoproteinemia was due to the diarrhea or to the loss of blood by rectum is problematic. To some extent the hypoproteinemia was also due to insufficient intake of protein, as the patient admitted that she had been on practically a starvation diet for a long time previous to admission.

Cases 5, 6 and 7 represent instances of secondary anemia, with hypoproteinemia and consequent edema in which the loss of protein was in large part due to loss of blood by way of the intestinal tract.

HYPOPROTEINEMIA FROM DEFICIENT FORMATION OR DESTRUCTION OF SERUM PROTEIN

In the group of cases of hypoproteinemia from deficient formation or destruction of serum protein belong the cases of dropsy associated with pernicious anemia. Whether the hypoproteinemia in pernicious anemia is the result of deficient blood formation, or to increased destruction is still an unsettled problem and will not be discussed here. Sufficient for my purpose is the fact that a low blood protein is fairly frequent in this disease.

12. Fishberg, Ella H., and Fishberg, A. M.: *Proc. Soc. Exper. Biol. & Med.* 25: 296 (Jan.) 1928. Boggs, T. R., and Morris, R. S.: *J. Exper. Med.* 11: 553, 1909. Leiter, Kumpf,¹³ Shelburne and Egloff.¹⁴ Barker and Kirk.¹⁵

Edema in pernicious anemia is exceedingly common. According to Schaumann and Saltzmann,¹³ it is manifest at some time or other in the course of the disease in about half of the cases. The edema is characteristically present only in the relapses and is often the first symptom of a relapse. The edema has been ascribed to various causes: to impairment of kidney function, to the anemia, to the low hemoglobin, to impairment of capillary function and to myocardial insufficiency. Numerous observations by Kahn and Barsky,¹⁴ Gettler and Lindeman,¹⁵ Essen and Porges¹⁶ and Meulengracht¹⁷ report normal renal function in pernicious anemia. Clinically, myocardial insufficiency in uncomplicated cases is not manifest by any of the criteria of myocardial failure at present available. Meulengracht found no consistent relationship between the degree of the anemia and the edema. Indeed, it is hardly necessary to theorize as to the cause of the edema in pernicious anemia because it is sufficiently accounted for by a rather consistent hypoproteinemia whether the malady is accompanied by edema or not. Gettler and Lindeman found with the refractometer that in 76 per cent of all patients with pernicious anemia the serum fraction was below the normal level; in some instances the decrease was even from 40 to 50 per cent below the normal. Kahn and Barsky found the blood protein low in three cases. Meulengracht, whose study of the blood proteins in pernicious anemia is the most comprehensive extant thus far, found a low serum protein percentage in a majority of twelve patients with pernicious anemia; he also found the colloidal osmotic pressure low and proportional to the lowering of the amount of protein. He maintains that the low plasma protein and the low colloidal pressure in the blood may be a contributing factor in the cause of the edema in pernicious anemia and that in some cases it is possibly the dominating influence. He believes, however, that there may be another factor, because there is no parallelism between the amount of edema and the reduction in the excretion of water, on the one hand, and the lowering of the colloidal osmotic pressure, on the other. However, Meulengracht made no determinations of the albumin-globulin ratio, and, as will become evident, it is not the total protein but the albumin fraction that to a large extent determines the colloidal osmotic pressure, so that Meulengracht's secondary factor loses something of its importance. The following case is illustrative of the relation of edema to low plasma protein in pernicious anemia:

CASE 8.—G. F., a woman, aged 69, admitted to the service of Dr. B. S. Oppenheimer in May, 1932, complained of increasing weakness for the past three years, attacks of palpitation, burning of the tongue, diminished appetite and dyspnea on exertion. For one year she had retrosternal burning, epigastric pain after meals, and paresthesia of the hands and feet. There was no diarrhea, vomiting, or passage of blood in the stools. Examination showed a lemon yellow skin, emaciation, atrophy of the tongue and a slightly enlarged heart to the left with a rough systolic murmur at the apex. The blood pressure was 98 systolic, 62 diastolic. The hemoglobin was 32 per cent. The red blood count was 1,050,000 and the white blood count 3,000, with 0.6 per cent reticulocytes. The platelets were 400,000 and the color index was 1.6. The test meal showed no free acid

after histamine. The stool gave a negative guaiac reaction. The urine showed a trace of albumin. The Wassermann reaction of the blood was negative. The blood urea nitrogen was 13 mg. per hundred cubic centimeters. The blood sugar was 105 mg. and the cholesterol 210 mg. The chest by roentgen examination showed an old tuberculous process at both apices. The diagnosis of pernicious anemia was obvious. The patient was given a transfusion and liver extract and in two weeks the hemoglobin rose to 48 per cent, with 15 per cent reticulocytes. One week later a pitting edema of the eyelids, back and legs was noted. The blood serum proteins were reported to be 4.6 Gm. per hundred cubic centimeters, of which 3.5 per cent was albumin and 1.1 per cent was globulin. Later investigation elicited the fact that this patient, because of anorexia, had placed herself on a low protein diet, so that the hypoproteinemia was partly nutritional in origin.

HYPOPROTEINEMIA DUE TO LACK OF PROTEIN INTAKE

The common occurrence of edema among the undernourished peoples in the late war is well known. Maver¹⁸ gives an excellent historical summary of the so-called war edema and collected a large number of observations on the occurrence of dropsy during famines, in prisons in which undernourishment was practiced, and wherever starvation or semistarvation occurred. It would be idle to review the various theories that have been ascribed as to the cause of edema. Suffice it to say that every evidence shows that the so-called war or, better termed, nutritional edema is due to deficient protein intake and consequent hypoproteinemia. Jansen,¹⁹ who made a comprehensive study of the metabolism in war edema, was apparently the first to find in thirty of forty cases a blood serum protein of between 4 and 6 Gm. per hundred cubic centimeters. The edema fluid was low in protein. He also found a negative nitrogen balance. He did not, however, ascribe the edema to the hypoproteinemia. Nixon²⁰ and Schittenhelm and Schlecht²¹ also found low plasma proteins in war edema. That the civilian peoples in central Europe suffered from a profound lack of protein food in the last year or two of the World War is not denied. Falta²² estimated that persons showing war dropsy had been on a diet of from 1,200 to 1,400 calories a day, of which from 30 to 50 Gm. was protein (normal 91). He believes that the edema was aggravated by the large quantity of sodium chloride in the food. Lusk²³ estimates that the average protein content of the food in Germany during the years 1916 and 1917 was only 31.1 Gm. a day. The final proof that the hypoproteinemia was the cause of the war edema was shown when it was found that the edema disappeared following polyuria with a diet adequate in protein.

Since then, abundant experimental work has shown the relation between protein poor diets and edema. Denton and Kohman²⁴ found that rats fed on a diet of carrots became dropsical. Kohman²⁵ found that, if these rats were fed adequately with protein, edema did not result and the animals grew normally. Control experiments showed that the edema was not caused by toxic products in the carrots, by starvation or by a low

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22. Falta, W.: *Wien. klin. Wchnschr.* 30: 1736, 1917.

23. Lusk, Graham: *Physiol. Rev.* 1: 523 (Oct.) 1921.

24. Denton, M. C., and Kohman, Emma: *J. Biol. Chem.* 36: 249 (Nov.) 1918.

25. Kohman, Emma: *Am. J. Physiol.* 51: 378 (March) 1920; quoted by Maver.¹⁸

caloric intake. Maver,¹⁸ in an extensive study, corroborated Kolman's results in every detail. Frisch, Mendel and Peters²⁶ confirmed these experiments and found the plasma proteins low. Peters, Wakeman and Eisenman²⁷ found low plasma proteins in all kinds of malnutrition; in cancer, pernicious anemia, pyloric and esophageal obstruction, and burns. Most of these patients had anasarca and the blood plasma proteins varied between 4.1 and 7.17 Gm. per hundred cubic centimeters. Bruckman, d'Esopo and Peters²⁸ also found reduced serum proteins in various forms of malnutrition. In their investigations, reduction was at the expense of the albumin fraction. Temporary high values were found when the patients were dehydrated. If infection occurred, the globulins increased. For this reason the total proteins in certain patients with malnutrition and infection may be found normal in spite of a definite albumin deficiency in the blood. Wolfert²⁹ found a blood protein of 4.6 Gm. per hundred cubic centimeters in a patient with a fecal fistula following appendicitis, who suffered from inanition and edema. Liu, Chu, Wang and Chung,³⁰ working in China, showed that nutritional edema is definitely related to the level and quantity of the protein intake. They hold that 1 Gm. of animal protein per kilogram of body weight is much superior to the same amount of vegetable protein in building up the plasma proteins and that 2 Gm. of vegetable protein per kilogram seems necessary to secure the same effect as that produced by 1 Gm. of animal protein. Shelburne and Egloff⁹ caused hypoproteinemia in a dog by reducing the protein intake. The blood plasma protein was reduced from 6.8 to 4.7 Gm. per hundred cubic centimeters on the twenty-eighth day and the albumin-globulin ratio had changed from 4:2.2 to 1.8:1.6. Edema was not present until the eighty-third day, when the plasma protein was 3.2 Gm. per hundred cubic centimeters and the animal was given 13.5 Gm. of sodium chloride. Thereafter the edema persisted even when salt was not added. The cholesterol level remained normal except on the seventy-seventh and the eighty-fourth day, when the readings were 417 and 409, respectively. These observations are identical with those found by Leiter⁷ in plasmapheresis.

Interesting examples of nutritional dropsy are quoted by Maver.¹⁸ Such dropsy occurs occasionally in draft oxen and horses that are fed exclusively on distiller's wash, which consists of 5 per cent solid matter and 95 per cent water. The total amount of protein in this foodstuff is only 0.5 per cent. A similar form of dropsy or cachexia is found in sheep from insufficient pasturage.

Clinically, patients with nutritional edema presented an interesting group of signs and symptoms, many of which are common to those observed in hypoproteinemia of other origins; for instance, those associated with lipid nephrosis. Aside from edema, these patients complained of heaviness, weakness and lassitude. They were exceedingly sensitive to cold; death followed slight chilling, so that warmth became an essential part of the treatment. Hemeralopia frequently preceded the onset of edema. Most observers report a bradycardia (Falta) with a rate of between 30 and 50. Anemia is

the rule. These clinical evidences certainly resemble closely those seen in myxedema, and since the basal metabolism in lipid nephrosis is notoriously low, it is justifiable to speculate on whether the basal metabolism in nutritional edema is also not lowered. It is suggestive in this connection that Jansen,¹⁹ in his autopsies on cases of war edema, found the thyroid one-third the normal size. These evidences suggest but do not prove that the lowered basal metabolism is a conservative mechanism on the part of the organism and that it does not represent a primary disorder of metabolism. Perhaps the diuresis so frequently observed in nephrosis following fever represents the reaction consequent to the heightened basal metabolism.

All present evidence thus far shows that in nutritional edema a hypoproteinemia is the fundamental cause. All that remains to be added is that Jansen found no significant changes, aside from the diminution in size of the thyroid gland, in the organs of patients who died during an attack of war edema. The other organs were small, owing to the general atrophy; the kidneys were congested and showed some clouding of the epithelium. No fat was found in any of the organs by the sudan stain. The muscle fibers did not contain glycogen.

MECHANISM OF THE PRODUCTION OF EDEMA BY HYPOPROTEINEMIA

Epstein's contention that in nephrosis the law of Starling was applicable to the production of edema was first proved by Krogh,³¹ and later by Mayrs³² and by Schade and Clausen.³³ Epstein assumed that the total osmotic pressure of the plasma proteins was markedly lowered in the edema of "nephrosis." This observation has since then been repeatedly confirmed. It was soon found, however, that there was no linear relationship between the fall in the osmotic pressure of the total plasma proteins, on the one hand, and the development of edema, on the other; in other words, two specimens of plasma, each containing, say, 5 Gm. per hundred cubic centimeters, might have different colloidal osmotic pressures. This discrepancy was clarified by Govaerts,³⁴ who showed that the colloidal osmotic pressure of 1 Gm. of albumin was 7.54 cm. of water, while that of globulin was only 1.95 cm. Since in nephrotic edema (and indeed, for that matter, in all the hypoproteinemias of other origins) it is the albumin fraction that is lost (because of the smaller size of the molecule), it is readily understandable why estimates at which level of the hypoproteinemias edema will appear are not reliable. At present the consensus seems to be that the appearance of edema corresponds more to the level of the albumin fraction in the plasma than to any other factor. Moore and Van Slyke³⁵ found that, when the albumin is below 2.5 ± 0.2 Gm. per hundred cubic centimeters, edema is always present. Even such a standard must be subject to a wide range because other factors in the production of edema, such as the capillary pressure and, above all, the circulating electrolytes, must be taken into consideration. Furthermore, when fever complicates a hypoproteinemia, the globulins are increased,³⁵ so that the colloidal osmotic pressure of the total proteins may be decidedly affected and become disproportionate to the osmotic pressure of the albumin fraction.

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35. Moore, N. S., and Van Slyke, D. D.: *J. Clin. Investigation* 8: 337 (April) 1930.

Increased capillary permeability probably plays no rôle in causing transudation in hypoproteinemia because the edematous fluid contains very little protein—less than 1 per cent—in contradistinction to the exudates resulting from inflammatory processes, which contain from 4 to 6 per cent of protein.³⁶ It is obvious that if the hydrostatic pressure in the human capillaries, which, according to Landis, ranges between 32 mm. of mercury in the arteriolar limb to 12 mm. in the venous, is increased the tendency to edema will increase. The edema in cardiac patients is probably the result of a combination of increased capillary pressure (which is in turn consequent on the increased venous pressure) with increased permeability of the capillaries due to asphyxia and is independent of any change in the total proteins in the blood, which indeed are usually unaffected in such patients. In a recent study, Payne and Peters³⁷ found a low protein blood content in certain cardiac patients with edema who suffered from malnutrition. Such edemas subside with an increase of protein in the diet. Iversen and Nakazawa³⁸ and Schade and Clausen³⁹ found in decompensated cardiac patients that the colloidal osmotic pressure of the plasma was not sufficiently low to explain the edema. Reduction of the hydrostatic pressure within the capillaries to the point of neutralizing the decreased osmotic tension of the proteins in hypoproteinemia apparently does not obtain in the living organism. The only way of counteracting such an influence is to increase the blood proteins by feeding or by transfusion. Iversen and Nakazawa state that when the hydrostatic pressure is unchanged edema appears when the colloidal osmotic pressure of the plasma is reduced to from 17 to 21 mm. of mercury, while Mayrs observed that the edema disappeared when the colloidal osmotic pressure was elevated to between 15 and 17 mm. of mercury. Landis,³⁹ in a well studied case of tuberculous enteritis with hypoproteinemia, found that the edema disappeared when the osmotic pressure rose to 17.5 mm. of mercury coincident with a rise of total protein to 4.7 per cent following a transfusion.

The balance between the osmotic pressure of the plasma and the hydrostatic pressure in the capillaries does not explain every phenomenon in the production of edema. There is a third factor and an important one: namely, the behavior of certain electrolytes in the body tissues. Ever since Widál, who ascribed the edema in certain renal disorders to the failure of the kidney to excrete salt, the relation of sodium chloride to edema formation has been a much debated subject. While there is no doubt that the restriction of salt had a very profound effect on the edema, it soon became evident that it was not the inability of the kidney to excrete salt that caused the edema, but rather that all edematous patients, no matter of what origin, retained salt, because the transudate abstracted salt from the tissues. That salt retention alone is not the cause of the edema is seen in the cases of blocked kidneys due to bilateral obstruction with resulting anuria, in which the retention of salt reaches enormous levels without the development of anasarca. Apparently the effect of salt on the water exchange between the blood and the body tissues depends almost entirely on whether the patient is

edematous or not. In other words, given an edema of whatever origin, hypoproteinemia for instance, the effect of salt ingestion is profound, as any clinician can testify. When the subject is deprived of salt, the edema will subside; an increase will aggravate it, with consequent chloride retention and oliguria. In experimental plasmapheresis, when the hypoproteinemia approached the critical level the addition of appreciable quantities of sodium chloride to the diet rapidly brought about an edema, and when the edema had already occurred the ingestion of sodium chloride increased the edema profoundly.⁴⁰ I shall not enter too largely into the question whether the sodium or the chloride ion is responsible for this action, except to say that since other sodium salts, such as potassium, ammonium and calcium chloride, decrease the edema, the evidence strongly favors the sodium ion as being the responsible ion. This was also shown by Shelburne and Egloff in their observations on plasmapheresis.

The factor of the electrolytes cannot therefore be ignored in the explanation of edema. Van Slyke applied the law of the Donnan equilibrium to the development of edema. He held that the nondiffusible protein ion causes an unequal distribution of the diffusible ions represented by the ions of the electrolytes, so that the latter represent about one fifth of the total osmotic pressure when in equilibrium with Ringer's solution. When hypoproteinemia occurs, this fraction of the osmotic pressure is correspondingly lowered.

There is nothing specific in the reversal of the albumin-globulin ratio in the hypoproteinemias of renal origin. It is manifest in hypoproteinemias of any origin. The cause of this reversal is not entirely clear. One may conjecture that the reversal is due partly to the fact that in hypoproteinemia it is the albumin and not the globulin that is lost, and partly to the power of the body to regenerate globulin in such conditions as a compensatory measure.

The cause for the lipemia usually associated with hypoproteinemia has not been explained.

The capstone to this structure built up by the painstaking work of a host of clinical investigations was set by Leiter, who by plasmapheresis demonstrated in his experimental animals every phenomenon that had hitherto been described under the generic name of nephrosis: hypoproteinemia, edema, reversal of the albumin-globulin ratio, and lipemia. Since then, his work has been confirmed by numerous observers (Barker and Kirk; Fahr, Kerkhof and Giere, Kumpf, and Shelburne and Egloff). A summary of the results of plasmapheresis are admirably set forth in Leiter's recent monograph.⁴

CONCLUSIONS

Hypoproteinemia is common to many disorders and may result from

- (a) Loss of protein.
 - (b) Deficient formation or destruction of plasma protein.
 - (c) Insufficient intake of protein.
- Protein may be lost
- (a) By way of the kidneys (nephrotic type).
 - (b) By diarrheas of the alimentary tract.
 - (c) In anasarca.
 - (d) By loss of blood.

Hypoproteinemia due to deficient formation or increased destruction of plasma protein is one of the essential features of pernicious anemia.

36. Loeb, R. F.; Atchley, D. W.; Richards, D. W., Jr.; Benedict, Ethel M., and Driscoll, Mary E.: *J. Clin. Investigation* **11**: 621 (May) 1932.

37. Payne, S. A., and Peters, J. P.: *J. Clin. Investigation* **11**: 103 (Jan.) 1932.

38. Iversen, Paul, and Nakazawa, Fusakichi: *Biochem. Ztschr.* **191**: 307, 1927.

39. Landis, E. M.: *Heart* **15**: 209, 1930.

40. Fahr, George; Kerkhof, Arthur, and Giere, Ellis: *Proc. Soc. Exper. Biol. & Med.* **29**: 335 (Dec.) 1931. Shelburne and Egloff.⁹

Hypoproteinemias resulting from insufficient intake of protein arise in the conditions previously known as war edema, famine edema, hunger edema, prison edema and the edema associated with cachexia.

Hypoproteinemia produces the syndrome that has hitherto been classified under the heading "nephrosis"; namely, edema, inversion of the albumin-globulin ratio, lipemia, and usually a lowered basal metabolism. The term "nephrosis" should be relegated to those forms of hypoproteinemia that are exclusively renal in origin. "Nephrosis" cannot be classified as a disease because it has multiform backgrounds in morbid anatomy.

The fundamental cause of the edema is the hypoproteinemia, and the mechanism is that suggested by Epstein; namely, a reduction in the osmotic pressure of the serum protein. This has been conclusively shown both clinically and experimentally. The appearance and intensity of the edema parallels the reduction of the albumin fraction rather than the total plasma protein, because the albumin has a much higher osmotic tension than the globulin and the fibrinogen, the other important protein components of the blood plasma.

The circulating electrolytes have an important influence in modifying the edema associated with hypoproteinemia, and the evidence is strong that it is the sodium ion and not the chloride ion that tends to aggravate the preexisting edema. Calcium and potassium seem to have the opposite effect.

Edemas of cardiac origin are not directly related to hypoproteinemia, except in certain instances of malnutrition. In edemas of purely cardiac origin the increased capillary permeability plays the essential rôle.

The lipemia and the lowered basal metabolism in hypoproteinemia are still unexplained.

25 West Sixty-Eighth Street.

ORCHITIS DUE TO MUMPS WITHOUT INVOLVEMENT OF THE PAROTID GLANDS

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Orchitis occurring in infectious diseases is relatively common. Cases have been frequently reported in medical literature of acute inflammatory changes in the testicles complicating typhoid, paratyphoid, smallpox, tonsillitis, scarlet fever, diphtheria and other contagious and infectious diseases. Probably one of the most frequent infectious diseases in which the testicle is involved is mumps. Some writers have mentioned that the complication occurs once in every three cases, while others have observed a change in either the right or the left testicle in about 18 per cent. Of the cases affected, subsequently 55 per cent were followed by atrophy of either one or the other testicle. Following a rather sudden elevation of temperature, within a day or two there is pain below and in front of the ear with stiffness at the angle of the jaw and involvement of the parotid and other salivary glands. Within a period of about eight days, one or two testicles may become acutely inflamed. This constitutes the ordinary symptoms of mumps, and when complicated by orchitis a diagnosis is easily made and testicular change is readily accounted for.

However, without involvement of the parotid or salivary glands, diagnosis of orchitis complicating mumps may not be readily recognized. In reviewing the literature, one textbook reports only sixty-four cases and little mention is made of the subject. We present a case, adding one more to the records of orchitis due to mumps without involvement of the parotid or other salivary glands.

A man, aged 32, whose past history was of no great importance, had had a few of the acute infectious diseases of childhood but never mumps, had always been in good health, was active in outdoor sports, and had traveled considerably. His urologic history was relatively negative except that six years before he had an acute gonorrheal infection and was treated by one of us. This infection had been cured, because many smears were made and repeated over an indefinite period. All were found negative to pus cells or bacteria. The possibilities of infection in the lower urologic tract were carefully investigated both by clinical and by laboratory examinations and were found to be negative. In his family history the most important finding was that a brother had died from tuberculosis. Examination for tuberculosis was negative in his case.

While on a trip to Canada the patient became sick and called a physician, who found he had a temperature of 102 F. and thought he was suffering from a cold. Under treatment he did not improve; his fever persisted and he returned home. Following his arrival home the left testicle became suddenly painful and swollen, and one of us was called in to see him. The patient had a temperature of 102 and complained of severe pain in the left testicle. It was large, acutely tender, smooth and very sensitive to touch. The epididymis could not be outlined because of tension within the tunica vaginalis testis. The cord and vas were not involved. All other clinical observations were negative. Inquiry into family conditions revealed that one of his daughters had recovered from an attack of mumps two weeks previously.

Under routine treatment such as rest, diet and elevation of the scrotum with the application of ice, the patient did very well. About the fourth day the right testicle became suddenly swollen and tender, with a marked elevation of temperature, 103.6. The next few days the swelling and pain increased regardless of treatment, which consisted of ice and heat. Morphine and sedatives did not relieve his pain, and the temperature persisted between 103 and 104. General malaise increased, the pulse was rapid, the skin became dry, and the urinary output was scanty in the face of forced fluids. With the unfavorable progress at home it was decided to remove him to the hospital for closer observation, with the thought of operating on the enormous swollen testicle, which was under considerable tension, causing almost uncontrollable pain. On admission to the hospital the patient appeared to be quite ill. His temperature was 104. Physical examination was negative except for mild swelling of the left testicle and enormous swelling and tenderness of the right testicle. The enlargement was smooth and round and felt as if the tunica vaginalis was under great pressure. Careful watch was kept of the parotid and salivary glands, but there was no enlargement or evidence of inflammation of their ducts. Repeated urinary examinations were essentially negative. Examination of the blood showed a leukocytosis of 14,000 with a relative lymphocytosis of 36 per cent. The Wassermann and Widal tests and blood cultures were negative.

His treatment in the hospital consisted of liquid diet, forced fluids, morphine for pain, and elevation of the scrotum. We found that the application of heat gave him the most relief. However, the swelling was large and the tension great. It was decided that operation for relief of tension, probably caused by fluid in the cavity of the tunica vaginalis, would relieve his condition. On the morning set for the operation the patient suddenly began to feel relieved of the testicular pain, and the temperature abruptly dropped to normal. This was on the third day following his admission to the hospital. From this time on he gradually improved and was discharged from the hospital on the ninth day, the testicles practically normal in size and free from pain.

It is now one and a half years since the onset of his illness and a recent check-up was made with the following results: Essentially the lower urologic tract was normal. The left testicle, which was first involved, was normal in size and shape but slightly soft in consistency. There was no change in the cord, vas or epididymis. No pathologic changes could be found on the right side. The testicle was normal in size and feeling. The patient did not complain of subjective symptoms and apparently is enjoying good health. Symptoms not being severe enough and fortunately subsiding at the time of the considered operation, we are unable to describe what pathologic changes would have been found.

However, it is fitting at this time to describe the pathology of orchitis of mumps, and we are indebted to Dr. George Gilbert Smith, who has performed operations in two such cases. He found on opening the tunica vaginalis that there was an escape of about 1 ounce of turbid yellow fluid. The testicle was considerably enlarged, firm and elastic on palpation. The color was bluer than normal and throughout the tunica albuginea were scattered minute reddish specks, probably punctate hemorrhages. The epididymis was definitely enlarged, soft without induration and deep red, the globus major almost black. The cord was somewhat edematous and the vas normal. Dr. Smith's second case presented "an almost identical picture." Small sections of these testicles were examined by Dr. S. B. Wolbach in the Harvard Medical School, and he reported as follows:

The process does not affect the testicle tissue uniformly. There are groups of seminiferous tubules which are completely destroyed and distended with exudate, separated by areas of normal and slightly affected tubules which contain large numbers of mitotic sexual cells, though there were few mature spermatozoa. The exudate in the destroyed tubules consisted chiefly of polymorphonuclear leukocytes and phagocytic endothelial leukocytes. The cells of the tubules had undergone a hyaline degeneration, being taken up by phagocytic endothelial leukocytes. The intertubular connective tissue was edematous and between the tubules most affected were coarse meshed fibrin, small areas of hemorrhage and many polymorphonuclear leukocytes and endothelial leukocytes. Among the groups of least affected tubules were normal epithelium but with lumina partly filled with polymorphonuclear and endothelial leukocytes, as if the process was spreading along the lumina. There were many other tubules with lesions involving a small portion of the circumference which appeared as if the process was extending from the intertubular connective tissue. The tunica albuginea was edematous with small hemorrhages and zones of cellular exudate about the blood vessels. The cells about the blood vessels were polymorphonuclear leukocytes and endothelial leukocytes. Liquefaction necrosis was not found in the tubules or connective structures. No bacteria or parasites were found in sections and films made at the time of operation. In both cases blood cultures and cultures from hydrocele fluid and testicular tissue were bacteriologically negative.

For this work and the description we are indebted to Dr. Smith and Dr. Wolbach and are sorry that we could not have gone further with our case to compare the observations.

CONCLUSION

We feel certain as to the diagnosis in eliminating the various causes of orchitis in this case. Chiefly syphilis was ruled out by the history and by the Wassermann test. Tuberculosis was strongly considered on account of the family tendency; this was ruled out by the absence of involvement of the epididymis following recovery from the acute symptoms, by the urologic check-up and by negative examinations of the lungs and roentgenograms. Typhoid and septicemia were eliminated by blood studies. The important question of

gonorrhea and its sequels was thoroughly eliminated by clinical and laboratory examinations.

Mumps was the final diagnosis for the following reasons: the fact that the patient had never suffered from the disease but had recently been exposed to the disease by his daughter; the sequence of involvement of first one testicle and then the other; the duration of the illness with swelling and enlargement of the testicle proper, and finally the relative lymphocytosis, which closely conforms to the previously reported cases of mumps in which the testicles are involved without apparent changes in the parotid or salivary glands.

36 Pleasant Street.

DIPHTHERIA CONTROL IN CHICAGO

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Experiences in New York State and in Detroit and other cities during the past nine years seem to indicate that if certain fractions of the child population were immunized against diphtheria, epidemics would not occur.¹ It is usually stated that if 35 per cent of the preschool children and 50 per cent of the school children were immunized, outbreaks of diphtheria in a community would not be possible.²

It is generally agreed that the most satisfactory method of active diphtheria immunization at the present time is with toxoid. Of a series of 100 infants, aged from 4 days to 2 years, given two injections of ordinary toxoid at intervals of either one or three weeks apart, 98 became Schick negative within three months.³

Recently, the alum toxoid first described in 1931,⁴ and afterward perfected by Park,⁵ has been shown to be even more efficient. In a preliminary experiment, of 500 children given two doses of 1 cc. of alum toxoid at a one-week interval, 95 per cent became Schick negative within sixty days, and over 99 per cent within seven months.⁶

Prior to 1931, Chicago's efforts in preventing diphtheria consisted in the immunization of some school children. For the fourteen years from 1917 through 1931, a total of 261,507 school children under 10 years of age had each received three injections of toxin-antitoxin. Chicago has a total of about 260,000 school children under 10 years of age. Nevertheless, up to 1930, diphtheria continued at about the same rate as previous to that time.

A study of the statistics shows that approximately 30 per cent of the diphtheria in children in Chicago was occurring in those under 5 years of age, that is, the preschool group, but that over 50 per cent of the mortality was in this age group. Even though over a quarter of a million school children were immunized up to 1931, nevertheless 70 per cent of the cases were

1. Godfrey, E. S., Jr.: Study in the Epidemiology of Diphtheria in Relation to the Active Immunization of Certain Age Groups, *Am. J. Pub. Health* 22: 237 (March) 1932.

2. By immunized is meant injection of toxoid or toxin-antitoxin, followed by a negative Schick test.

3. Greengard, Joseph: Diphtheria Toxoid (Diphtheria Anatoxin-Ramon) in Infancy, *J. A. M. A.* 97: 228 (July 25) 1931.

4. Glenny, A. T., and Barr, Mollie: *J. Path. & Bact.* 34: 131 (March) 1931.

5. Park, W. H., and Schroder, H. C.: *Am. J. Pub. Health* 22: 7 (Jan.) 1932.

6. Annual Report of the Chicago Board of Health, 1933.

occurring in school children. Therefore, a concerted drive was started in October, 1931, to immunize the preschool children without any remission of efforts to protect those in the schools.

It was felt from the beginning of the drive that the family physician should be depended on to do the bulk of the work. However, some method had to be devised for getting parents to take their children to the private physicians for immunization. In order to accomplish this, the nurses were made the sales force.

In Detroit, Dr. Henry Vaughan, commissioner of health, reports that a general educational program through newspapers, the radio, bulletins and the like

was added to the force, and at the present time there are also 80 nurses from the Municipal Tuberculosis Sanitarium who are giving part of their time in aiding this drive.

The eighteen stations of the Infant Welfare Society, the twenty-two of the board of health, and the public and parochial schools were made centers for the administration of the diphtheria toxoid to those who could not afford a private physician.

An extensive program of publicity and education was begun in October, 1931, by sending a bulletin concerning diphtheria prevention to the mothers of all children under 8 years of age and letters to physicians, teachers and pastors; with posters on bill-boards, in street cars and trains, with taxicab stickers and with a series of radio talks.

A study of the mortality statistics showed that the majority of the deaths were occurring in children of the Slavic races, the majority of whom are of the Catholic faith. Therefore, a special folder, containing letters from Cardinal Mundelein, together with a letter from the president of the board of health, was prepared and distributed from the churches and parochial schools, following a statement of explanation by the priest.

Dr. Louis D. Moorhead, the cardinal's representative and a consulting member of the Chicago Board of Health, gave invaluable services in aiding to secure consents from many of the people of his faith and helped in the drive in many other ways.

The nurses each had a group of cards, containing the names of parents of children in the district assigned to them, who had not been immunized against diphtheria. They visited these parents, and urged them to take their children to the family physician for protection. In those instances in which the family was unable to afford a private physician, they were informed that the child could be taken to the nearest infant welfare station or school to have the inoculations given.

TABLE 1.—Decline in Case and Death Rates in Six Year Period

Per 100,000 Population	Case Rate	Death Rate
1927.....	129.0	13.8
1928.....	149.6	14.0
1929.....	180.7	15.4
1930.....	146.3	12.1
1931.....	90.9	6.2
1932.....	35.9	1.8

secured response in the form of protection against diphtheria in only from 18 to 20 per cent of the children. However, with the visits of nurses to the homes, from 60 to 90 per cent of the parents responded by taking their children to physicians to have them immunized.⁷

METHODS OF URGING IMMUNIZATION

There is on file in the Chicago Board of Health an up-to-date list of 331,461 babies, representing the children living in Chicago who were born since August, 1925, exclusive of those who have died or left the city, or have moved and could not be located. In order to keep this list up to date, every month or two some type of literature was sent to the mothers whose names are on this list. The literature was

TABLE 2.—Morbidity and Mortality Statistics for Various Age Groups

	1927		1928		1929		1930		1931		1932	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	65	20	89	14	84	23	126	15	70	7	14	1
1 year.....	148	29	269	30	250	57	174	31	125	26	36	7
2 years.....	248	48	398	44	424	69	274	35	234	29	87	10
3 years.....	329	59	512	67	553	67	350	52	257	24	126	7
4 years.....	397	61	471	66	602	45	411	50	315	25	115	7
From 5 to 9 years.....	1,655	174	1,530	173	2,199	187	2,338	168	1,297	75	451	28
From 10 to 14 years.....	516	33	549	41	767	35	503	28	354	15	129	4
From 15 to 19 years.....	152	4	252	2	264	9	234	4	150	0	63	0
20 years and over.....	539	14	745	20	835	21	547	28	323	14	230	4
Unknown.....	74	0	65	0	34	0	5	0	20	0	15	0

returned with a forwarding address when the individual had moved, so that the addresses on the list could be corrected.

This up-to-date list was run through the addressograph machine, producing 292,461 name cards. The city was divided into 140 districts, and at the start of the campaign each district was assigned to a nurse. The cards were then distributed according to these districts. The nurses routed the cards in each district for the purpose of making calls.

The nurses also made a house to house canvass of the entire city, in order to get the names and addresses of children under 8 years of age not born in Chicago but who have come to live in the city.

After the program had been in effect for several months, an additional staff of 180 temporary nurses

If the child had already been given injections, it was noted on the card. As soon as the child was inoculated, a tab was put on the addressograph plate containing his name, indicating that the child had been injected. After the nurses had completed their calls and the plates of the injected children were tabbed, all the plates were run through the addressograph machine a second time. The tab on the plate kept a card for that plate from being printed, so that a second list was secured of the children who had not received inoculations. In the second list there were 134,109 names. The nurses then made a second visit to the homes of nonimmunized children, and the process of urging inoculations was repeated. The plates for children immunized since the previous visit were tabbed. The third list was then run and contained 102,546 names of nonimmunized children; the fourth, 78,436; the fifth, 36,558, and the sixth, 21,686.

7. Detroit Department of Health Bulletin, November, December, 1931.

In addition, as soon as each child in the city reached the age of 6 months, a visit to his home was made by the nurse to urge immunization.

During 1932, 218,030 children under 7 years of age, and a number between 7 and 10 years of age, were each given two doses of toxoid, and 78,495 school

of age were given three doses of toxin-antitoxin. Starting in October, 1932, all children under 10 years of age were given two doses of toxoid, and those few over 10 who were inoculated were given three doses of toxin-antitoxin. Since September, 1932, alum toxoid has been used.

The efficacy of the program is shown by the case rates and death rates for diphtheria in Chicago from 1927 through 1932 (table 1).

Table 2 shows the morbidity and mortality statistics of diphtheria for the various age groups, from 1927 through 1932.

During 1933 up to March 28 there have been eighty-three cases of diphtheria reported and only four deaths. From January 5 to February 12, a period of thirty-nine days, there were no deaths from diphtheria. The last death was of a child whose parents refused to permit him to be immunized. In the same thirty-nine days during 1929 there were 384 cases and 16 deaths.

The three deaths during 1933 occurred even though more than 85 per cent of the preschool population and more than 60 per cent of the school children have been inoculated against diphtheria. This is contrary to the expectations based on the reports from New York,¹ which we believe may be accounted for in part by the following facts:

In certain areas in Chicago there are groups of children whose parents, for one reason or another, resist having their children immunized, as can be seen from the map. In one of the 140 districts into which the city was divided, in February, 1933, 595 children were still unprotected; that is, about 3 per cent of the total of 21,686 children not immunized at that time (fig. 1). Such an area is like a small city in which the diphtheria cases and deaths may persist and the disease become epidemic even though the large majority of the entire childhood population of Chicago has been immunized. Even though more than 85 per cent of the preschool and 60 per cent of the school children in the city have been immunized, in these areas not even the 35 per cent and 50 per cent minimums stated by Godfrey have been attained.

In order to obtain complete protection for the entire community, no such large groups of children in any center should be allowed to go unimmunized. In other words, when it is said that diphtheria will vanish when at least 35 per cent of the preschool population and 50 per cent of the school children have been protected, it should mean that this 35 and 50 per cent must be distributed evenly throughout the city.

The effect of the diphtheria immunization program in Chicago on the mortality statistics of the state of Illinois is shown in figure 2.

It will be noted that the mortality from diphtheria outside the city of Chicago has been rising during

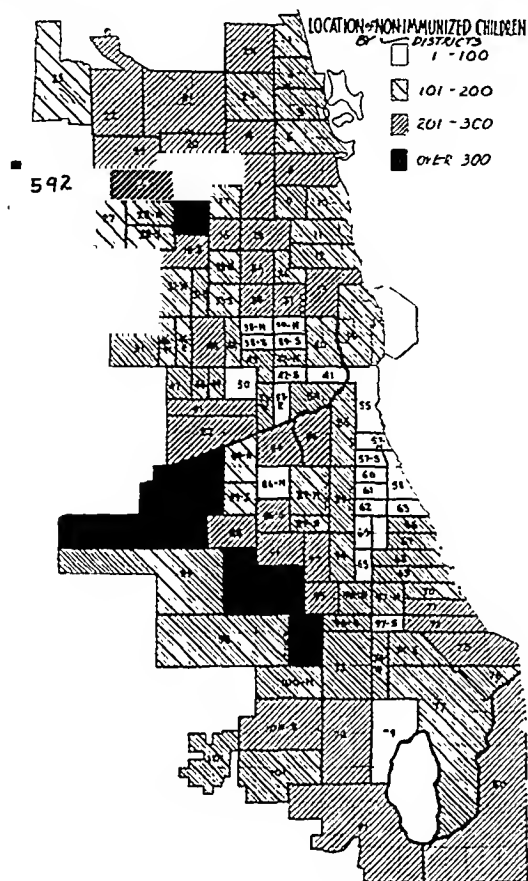


Fig. 1.—Location of nonimmunized children in Chicago.

children, representing the remainder between 7 and 10 years of age, were given three doses of toxin-antitoxin.

The nurses at all times encouraged the parents to take their children to private physicians when this was possible.

Very early in 1932 it was found that while the nurses did sell the idea of immunization to the parents, as shown by the large number of request cards signed, nevertheless, when the nurses revisited the homes they found that one out of every three mothers had failed to take her child either to the private physician or to the welfare station to be immunized. This usually occurred because of lack of finances, indifference, or inability to find time to take the child to be injected. Some parents were unable to afford even carfare.

In view of the fact that the parents were unable to bring the children to be immunized, it was planned to bring the immunization to them. Two busses were fitted out with the necessary materials for administering toxoid. These busses have been on the street since September, 1932. From them, 16,496 children, whose parents were unable to afford private physicians, were injected.

At the beginning of the program in October, 1931, children under 6 years of age were given two doses of toxoid at weekly intervals. Children over 6 years

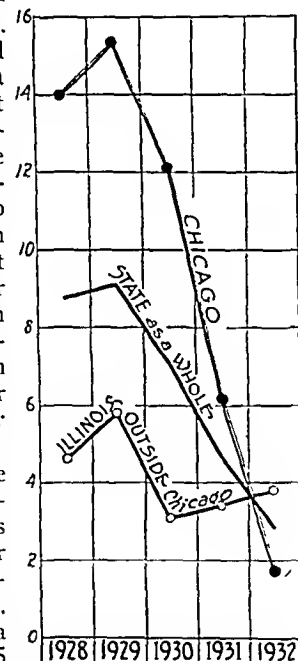


Fig. 2.—Diphtheria death rate per hundred thousand of population in the state of Illinois.

1930, 1931 and 1932, but that in Chicago it has been sharply decreasing. The decrease in Chicago has been so great that even though the mortality in the remainder of the state is increasing, it appears that the mortality throughout the state is receding. In other words, there has been a rapid decline of diphtheria in Chicago and an increase in the remainder of the state.

The state director of health should be given as much support as possible, as well as financial aid, for procuring the necessary biologic materials for a drive to reduce diphtheria mortality throughout Illinois.

At the present time, as soon as a child reaches 6 months of age, the nurse makes a call at the home to urge diphtheria immunization by the family physician. Return visits are made again at 8, 10 and 12 months if the child is not reported as having been given injections.

If, on the first return visit, the nurse finds that the parents have been unable to afford a private physician, she suggests taking the child to the nearest infant welfare station. At all times, the nurse is the salesman, making contacts and urging immunization by the private physician. The more contacts that are made, the more children are likely to be taken for protective injections. Contact is now being made with about 150 babies daily, as they reach 6 months of age, and provisions for their immediate immunization are thus established.

At present, the consensus seems to be that the best time for immunizing the child against diphtheria is between 6 and 9 months of age.⁸

Park⁹ states that in cities the best age for starting immunization against diphtheria is 9 months. In the country districts, he recommends starting at 6 months. In cities, the majority of mothers are immune to diphtheria. Therefore, the new-born babies are immune and the majority of infants keep this immunity until they are from 8 to 10 months of age.

However, we have found that even though immunization is urged, starting at 6 months, injections are not completed in many infants until they are a year old. February 1, 1933, of the children 7 months old, only 30 per cent had been injected; of those 8 months old, only 30 per cent; 9 months old, 60 per cent; 10 months old, 60 per cent; 11 months old, 75 per cent, and 12 months old, 85 per cent. Therefore, we think it wise to continue urging the giving of inoculations at 6 months.

SUMMARY

1. The diphtheria mortality in Chicago has been materially reduced by having nurses call on the parents of every child up to 8 years of age, urging that the child be taken to the family physician for diphtheria immunization and obtaining signed cards asking that the children be immunized.

2. The maintenance of an up-to-date addressograph list of all the younger children up to 8 years of age in a community is most important in carrying out many public health programs. It has been of extreme value in Chicago's diphtheria prevention campaign.

3. As soon as the child reaches the age of 6 months, a personal call is made on the mother; by continuing this routine it is likely that the diphtheria immunization will be brought to even a higher level and the mortality and morbidity to lower levels than have already been attained.

8. Prebit, M.: The Results of Active Antidiphtheria Immunization of Babies During the First Year of Life, *Rinasc. med.*, September, 1931.
Blum, Julius: Age Factor in Active Immunization of Infants Against Diphtheria, *M. Officer* 47:245 (June 18) 1932.
9. Park, W. H.: Personal communication to the authors.

4. With the alum toxoid, a far lesser number of reactions occur in the children; there is a more rapid production of immunity, and a greater percentage of the children become immune with two inoculations. In the light of present knowledge, it seems to be the most efficient immunizing agent against diphtheria.

5. In all communities in which there are a large number of foreign-born individuals, especially those of the Slavic races, the aid of the Catholic church proves invaluable in promoting public health work. Some of the individuals of these races, who, perhaps, have suffered from persecution of various types in foreign countries in years past, tend to resent any interference with what they consider personal liberty. The church aids materially in overcoming this resentment and has been one of the greatest single factors in making this campaign successful.

6. The distribution of literature urging diphtheria immunization in itself will not bring about protection of a large proportion of the childhood population. Such literature is, however, of great value in paving the way for the visits of the nurses, who should be the salesmen selling diphtheria immunization.

7. The cooperation of organized medicine is essential in the successful conduct of any public health campaign.
City Hall.

DIPHTHERIA IMMUNIZATION WITH A SINGLE INJECTION OF PRE- CIPITATED TOXOID

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Wells, Graham and Havens,¹ have described the precipitation of diphtheria toxoid with aluminum potassium sulphate, following the method of Glenny and Barr.² Havens and Wells³ have recently reported further work with completely precipitated toxoid. To the toxoid, prepared in the usual manner, by detoxification with formaldehyde, alum was added until no further precipitation occurred. The coarse, flocculent precipitate was washed twice with 0.85 per cent sodium chloride solution and the washed precipitate was then made up to such a volume with 0.85 per cent sodium chloride solution that 1 cc. contained the desired number of flocculating units. This treatment resulted in a purified product, as evidenced by the fact that nitrogen determinations showed an average loss of from 80 to 85 per cent of the original protein content. Antigenic tests in guinea-pigs indicated that a high degree of immunity is produced, a single injection of 5 units resulting in protection against as much as 450 minimum lethal doses of toxin. This paper presents the results obtained in children with this product.

A total of 798 children have been given a single injection of the alum precipitated toxoid. These may be divided for purposes of discussion into three groups. Groups 1 and 2 consisted of children of school age who were found to be strongly Schick positive and who were retested from two to six months after the single dose

1. Wells, D. M.; Graham, A. H., and Havens, L. C.: *Am. J. Pub. Health* 22:648 (June) 1932.
2. Glenny, A. T., and Barr, Mollie: *J. Path. & Bact.* 34:131 (March) 1931.
3. Havens, L. C., and Wells, D. M., to be published.

of toxoid. Group 1 received toxoid containing 10 units per cubic centimeter, while group 2 received toxoid containing 5 units per cubic centimeter. Group 3 consisted of children who were given the one injection of toxoid (either 5 or 10 units) without a preliminary Schick test but who were tested from two to four months later. Of the 613 children, 444 were in the age group 0 to 6 years.

Results appear in the accompanying table. Reactions, on the whole, either local or general, were no greater or more frequent than would be expected from ordinary toxoid in similar groups.

COMMENT

The results of immunization of children indicate clearly that a single injection of the alum precipitated toxoid results in immunity in a high percentage of cases. A single injection appears to be as effective as two or three injections of the best unprecipitated toxoid. The group of children who are known to have been strongly Schick positive prior to the injection of toxoid yielded 92.4 per cent completely Schick negative results from two to six months later. While the immunity status of group 3 was not known before the administration of the toxoid, the important fact, from the practical standpoint of mass immunization against diphtheria, is that one may expect at least 95

Immunity Status of Seven Hundred and Ninety-Eight Children Following a Single Injection of Precipitated Toxoid

Group	Number of Children	Original Schick	Toxoid	Re-Schick		Negative, per Cent
				Pos- itive	Nega- tive	
1	99	All positive	1 cc., 10 units	6	93	93.9
2	86	All positive	1 cc., 5 units	8	78	90.7
and 3	185	All positive	1 cc., 5-10 units	14	171	92.4
3	613	Unknown	1 cc., 5-10 units	21	592	96.57

per cent immunity following a single injection. The effect in accelerating the prevention of diphtheria by mass immunization is obvious.

It seems plausible to explain the effectiveness, as an immunizing agent, of the precipitated toxoid on the basis of its relative insolubility. It is absorbed slowly; less antigen is lost by rapid excretion, and there is a consequent prolonged antigenic stimulation. Soluble toxoid, on the other hand, as Glenny, Buttle and Stevens⁴ have shown, is excreted rapidly and there is only a transient stimulus to antitoxin production. These investigators conclude that, while part of the increased effectiveness may be due to local damage of the tissues by the alum, the chief factor is the slow, gradual absorption of the toxoid over a comparatively long period of time, with a resultant increased duration of exposure of the tissues to the specific antigen.

Precipitated toxoid has several advantages over the ordinary toxoid. Foremost, of course, is its greatly superior antigenic action. For practical field work in the prevention of diphtheria, the value of a single injection needs no comment. The precipitated product results in economies of preparation, in that two or three times as many persons may be immunized with the same amount of toxoid. A potent toxoid can be diluted to a fixed standard, while a weak one can be concentrated by resuspending the precipitate in a smaller volume of salt solution. The results with group 2,

as shown in the table, indicate that five units are sufficient to produce a negative Schick test in at least 90 per cent of known susceptible children. If this suggestion is confirmed by further observations, the average toxoid can be considered diluted.

SUMMARY

A single injection of from 5 to 10 units of precipitated toxoid has rendered 171, or 92.4 per cent, of 185 strongly Schick positive children Schick negative.

Of 613 children, 592, or 96.6 per cent, were Schick negative when tested from two to four months after a single injection. The original immunity status was unknown, but 72 per cent were preschool children.

AN UNUSUAL ENCEPHALOPATHY, PROBABLY INFECTIOUS IN ORIGIN

CLINICAL REPORT ON TWENTY CASES

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During the latter eight months of 1932, in the vicinity of Cincinnati, I had occasion to observe both in private practice and in the service of the neurologic department of the Cincinnati General Hospital a number of cases of encephalitis differing in their clinical manifestations from the epidemic which first appeared in 1914. Some of the cases showed evidence of bleeding in the spinal fluid, others were accompanied by bleeding with lymphocytes, while still others showed no evidence of either red or white blood cells in the spinal fluid, although the latter group showed some increase in the globulin content.

Somnolence was a symptom in some cases but was by no means constant. Some of the cases tended toward partial or complete recovery. None of the patients who have recovered have shown extrapyramidal residuals.

REPORT OF CASES

CASE 1.—Mrs. H. C., aged 48, referred by Dr. George Topmoller, seen, Aug. 25, 1932, had voiced many neurasthenic complaints for a number of years, according to the history obtained from her husband. She complained of weakness and exhaustion and at times coughed, although she never coughed up any blood. Her condition had been about the same until two days before her admission to the hospital. At that time she complained of pain in the bladder and difficulty of urination. Her family physician examined the urine and aside from a few pus cells noted nothing unusual. Two days before coming into the hospital, she fainted. After recovering from the faint she was drowsy and the following morning could not be roused. She was taken to the Good Samaritan Hospital and on entering was in a state of delirium, using obscene language and swearing at the nurses and physicians, a thing that was entirely foreign to her normal conduct. This state of delirium did not last more than a few hours, when she became drowsy and somnolent and could not be roused.

Neurologic examination showed dilated hippus pupils, slight ptosis of the left eyelid, loss of abdominal reflexes, and positive Babinski and ankle clonus on the right side and to a lesser extent on the left side.

A spinal puncture was performed. The fluid was under a low pressure, registering 4 cm. of water. It was blood tinged. At first it was thought that this was due to the spinal puncture; but on immediate centrifugation of the fluid, the supernatant fluid was seen to be yellow, showing that the blood was coming from some point in the nervous system and not from the puncture wound.

4. Glenny, A. T.; Buttle, G. A. II., and Stevens, Muriel F.: *J. Path. & Bact.* 34: 267 (March) 1931.

The patient continued to remain in the stuporous state and the spinal puncture was repeated the following day, the fluid at this time containing more blood than before and even more yellow. The numerical count of the spinal fluid was 4,000 red cells and 40 white cells. A Wassermann test of the spinal fluid was negative; the amount of globulin was normal, and the gold curve was negative. Culture of the spinal fluid was negative, and search for tubercle bacilli and other organisms was negative.

The following day the patient died, apparently of a respiratory paralysis. Permission was obtained to remove the brain only. The brain showed marked engorgement and congestion with thrombosis of most of the sinuses of the dura. Microscopically there were clear spaces about the blood vessels, indicating considerable serous inflammation. A frank perivascular inflammatory reaction such as was seen during the epidemic of epidemic (lethargic) encephalitis was conspicuous by its absence, although marked congestion was noted; also edema and mild perivascular lymphocytosis in some of the sections at the base of the brain.

CASE 2.—A nun, aged 25, seen at the Good Samaritan Hospital, was admitted to the hospital, Aug. 22, 1932, with the history that she had had a convulsion the day before. While at the hospital she had two generalized convulsions and vomited during one of them. She was drowsy and somnolent.

The neurologic examination showed congestion of the disks, weakness of the right side of the face, a positive Babinski reflex and clonus on the right side, and diminished abdominal reflexes on the right side.

The spinal fluid pressure registered 17 cm. of water. The fluid was bloody. The Wassermann reaction of the spinal fluid was negative; the fluid contained 8,000 red cells, 20 white cells. The fluid showed the normal amount of globulin, and the gold curve was negative.

The patient was somnolent for eight days, then began to improve, and for the time being recovered as far as her acute condition was concerned. She still showed a slight hyperreflexia on the right side.

The patient continued to be quite well for about two weeks. However, her associates noticed quite a change in her mental condition. She had been a teacher in a Catholic college. She wrote several letters to the Sister Superior of the college and these letters were returned to me for comment. The letters were quite disconnected, with a tendency to repetition and a marked inability to finish a thought or sentence. Her memory for recent events was greatly impaired. However, during this time she was up and about the room and did not complain of headache, although at times she complained of slight dizziness. She remained well till September 13, when she again became somnolent, sleeping the entire time during the day but being somewhat restless and delirious at night and complaining of headache.

Spinal puncture was repeated and at this time the spinal fluid had entirely cleared of cells and the color had returned to normal. The spinal fluid pressure was normal.

Dr. Nolan Carter was called to see the patient in consultation in order to exclude any possibility of brain tumor. He agreed with the original diagnosis of hemorrhagic encephalitis and advised against any surgical intervention.

The patient continued to be somnolent for seventeen days, the somnolence gradually deepening into coma, from which she could not be roused. The pyramidal signs originally noted reappeared. The patient died, September 30, of respiratory failure. Autopsy was refused.

CASE 3.—A white man, aged 43, seen, Aug. 23, 1932, through the courtesy of Drs. Donnelly and Crawford, had gotten up in the morning, four days before, dressed as usual, and was sitting down to breakfast, when he complained of a sudden pain in the back of the head. Following this, he vomited even before he could get away from the table. He did not fall and was not unconscious.

The patient became mentally confused with the onset of these symptoms.

At Christ Hospital, neurologic examination showed blurring of the nasal margins of the disks; the pupils were dilated, were quite active to light and in accommodation, and reacted to light

with a hippus effect. The external eye muscles were normal; there was no double vision. The fifth nerve was normal on both sides. There was weakness in the seventh nerve in the left lower part of the face. The remainder of the cranial nerves were normal. The biceps, triceps, radial, knee and achilles reflexes were present but slightly hyperactive on the right side; there was also some tendency to clonus on the right at times, and positive Chaddock and Babinski signs were present on the right.

Spinal puncture was performed. The pressure was low, registering 5 cm. of water. The fluid was bloody and looked about the color of tomato juice. Centrifuged fluid was yellow, showing hemorrhage due not to spinal puncture but to bleeding in the nervous system. Repeated spinal punctures gave the same result.

Roentgenograms of the skull were entirely negative. A Wassermann test of the spinal fluid was negative; the fluid contained 150,000 red cells and 2,500 white cells. A search for organisms and fluid culture was negative.

The patient continued for two weeks to complain bitterly of headache; he was mentally confused, slept during the day, and was restless at night. Three weeks later he began to improve; he was able to be up and about the room, and returned home; he did not have headache, dizziness or somnolence. Apparently the patient is entirely well. He has since returned to his original work as salesman and is doing his work in the usual manner with no organic residuals and no evidence of mental impairment.

It might be noted at this point that none of the cases of this series have shown the slightest evidence of extrapyramidal involvement, in marked contradistinction to the cases of epidemic encephalitis which we saw from 1914 to 1922 and 1923.

CASE 4.—A man, a second year medical student at the University of Cincinnati, brought to the General Hospital, had an infection of the upper respiratory tract which was diagnosed as grip, but after two days it was noticed that the patient slept most of the time, although he could be easily roused and was quite rational when roused. After he had been in the hospital three days, I was called in consultation by the medical service. The patient complained of headache. He had positive Oppenheim and Chaddock signs on the right side and hyperreflexia in the lower extremities, more pronounced on the right. Three days later paralysis of the right leg developed with plantar reversal signs and clonus. Double vision also developed; he had paralysis of the external rectus and could not look to the left past the midline with the left eye. This lasted about two days and the patient then began to improve. He can now look to the left side but still complains of double vision. There is a nystagmus on looking to the left. This is likewise improving.

The spinal fluid pressure registered 15 cm. of water. The spinal fluid was normal except that it contained about four times the normal amount of globulin.

The outcome of this case was as follows: The patient made a complete recovery from his acute encephalitis. All the organic manifestations have entirely disappeared. However, he shows a marked asthenia. He does not want to leave the hospital and shows no desire to return to any occupation. There has been a decided let-down in his intelligence and general physical state. He shows weakness of the right leg, with the persistence of a positive Oppenheim sign.

CASE 5.—In the case of a Negro, aged 25, admitted to the medical service at the Cincinnati General Hospital, the diagnosis of influenza was made. However, the intern noticed that the patient slept most of twenty-four hours, whereon he requested a neurologic examination.

The cranial nerves were normal. The deep reflexes were exaggerated on the right side. The patient had a Babinski reflex on the right side, which could also be elicited contralaterally by stroking the sole of the left foot. He slept for about a week and afterward made a complete recovery.

The spinal fluid contained 35 lymphocytes per cubic millimeter.

I examined the patient quite carefully for any extrapyramidal symptoms but found none on discharge.

CASE 6.—A white man, aged 35, seen through the courtesy of Dr. F. X. Siegel, presented himself, Sept. 27, 1932, complaining of double vision on looking to the right. There was weakness of the external rectus muscle and weakness of the right lower part of the face; the fundi were normal and the remainder of the cranial nerves were normal. The deep reflexes were hyperactive, definitely more so on the left side. The abdominal reflexes were slightly diminished on the left. There was no reversal of the plantar reflexes, though there was a somewhat persistent sustained ankle clonus on the left side.

Spinal puncture was performed. The spinal fluid was under considerable pressure, registering 30 cm. of water. A Wassermann test of the spinal fluid was negative; the fluid contained no cells and showed a negative gold curve and a trace of globulin. The Wassermann reaction of the blood was likewise negative.

The onset had occurred a week before, with double vision and headache. The patient was quite somnolent. His wife had difficulty in rousing him during the day; he slept the greater part of the day and night. There was also a decided mental change. He was quite apathetic and confused at times. However, after the spinal puncture and two weeks' rest in bed, the patient had entirely recovered and has since returned to his work, which is that of an accountant. His superiors tell me that his work is absolutely as good as it ever was and that they can see no residuals of his confused state.

CASE 7.—A white man, aged 36, referred to me by Dr. A. L. Knight and Dr. Mary Knight Asbury, complained chiefly of headache. This headache was very severe and was frontal and occipital in character; it was so severe that the patient was unable to sit up in bed. At the same time, double vision developed. The temperature was not taken during this period.

The patient was seen by me, November 8. He still had occasional double vision for objects at a distance. He did not complain of other visual defect, vomiting or dizziness.

An account from his wife was essentially the same with the exception that she stated that he had vomited occasionally, three or four times, during the first week. There had been some diarrhea associated with the symptoms two weeks before.

Ophthalmologic examination by Dr. Mary Knight Asbury revealed considerable congestion and hyperemia of the disks. However, there was no choked disk. The pupils were small, were equal, and reacted to light and in accommodation. The external muscles of the eye at the time of my examination, November 8, were normal. The fifth nerve was normal on both sides. There was definite weakness of the seventh nerve in the right lower portion of the face with weakness of the associated muscles of the platysma myoides on the right side. The remainder of the cranial nerves were normal.

The deep reflexes were hyperactive on the right side, the abdominal reflexes were diminished on the right. There was an inconstant Babinski reflex on the right and a constant Oppenheim sign on the left. There was an unsustained ankle clonus on both sides, which was more pronounced on the right side.

Of the coordination tests, the Romberg was negative. The finger to nose test was good; the heel to knee test was good, and the gait was good. No evidence of extrapyramidal or cerebellar involvement was present. Motor power was a trifle diminished in the right arm.

The Wassermann reaction of the blood was negative. A numerical and differential count gave normal results.

A spinal puncture was performed. The spinal fluid registered a pressure of 6 cm. Queckenstedt's test was normal. The spinal fluid contained 8 cells and showed a negative gold curve. However, the globulin content was markedly increased, registering about ten times the normal amount to Noguchi's butyric acid test.

After the spinal puncture, the patient's headache immediately disappeared and on November 12 he was discharged from the hospital.

A neurologic examination, November 12, showed slight weakness of the right side of the face with still a constant Oppenheim sign on the left side and slightly diminished abdominal reflexes in the right upper quadrant on the right side. All the other signs had disappeared.

CASE 8.—A white boy, aged 7 years, admitted to the hospital, Oct. 7, 1932, in a state of coma, died forty minutes after admission.

Sunday, October 2, it was noticed that the child had a limp in the right leg. This did not seem serious. Wednesday, October 5, during the night the child woke up and vomited. Thursday, he could not take food but had no special complaints. Friday, he was seen by a physician, who did not feel that the condition was serious. During the afternoon of the same day the child went into profound coma, from which he never roused.

The temperature on admission to the hospital was around 102.4 F. The child was in profound coma and could not be roused. Respiration was of the Cheyne-Stokes type; the skin was flushed.

Examination showed fixed pupils of moderate dilatation. The right pupil was larger than the left. Corneal reflexes were not present. The eyegrounds were normal. The head, neck and abdomen were normal. The blood pressure was 105 systolic, 40 diastolic. The extremities were well developed but somewhat spastic. The Kernig sign was slightly positive. Superficial reflexes were absent. The knee jerks were hyperactive bilaterally. Plantar reversal signs were all positive on the right.

Spinal puncture on admission showed a pressure of 33 cm. After the withdrawal of 7 cc. of fluid, the pressure still remained 33 cm. The fluid was blood tinged and contained 24,000 red cells per cubic millimeter. The Wassermann test of the spinal fluid and the culture proved to be negative.

A short time after examination, respiration practically ceased and caffeine and artificial respiration were used in an attempt to revive the child, but death occurred within forty minutes after admission.

CASE 9.—A boy, aged 3 years, entered the Children's Hospital, Aug. 20, 1932. August 13, the boy did not eat his supper; the same evening his mother noticed that he had a fever when she put him to bed. The fever continued throughout the night. The patient was restless, did not sleep well, and was irrational.

The following morning the child was stuporous. A physician was called in and the axillary temperature was found to be 104. About 1 p. m. that day the child began having convulsions, which were continuous until about 7 o'clock. The convulsions started with a cry of pain and a twitching of the right arm. Following the period of convulsions, the patient was entirely stuporous and completely disoriented. A coma supervened, which lasted forty-eight hours.

It was noticed that there was marked weakness, and at the first convulsion paralysis of the right arm and leg occurred. Since the time of the convulsions apparently the left side was also involved, but it has since recovered. The convulsions were always unilateral, involving either the right or the left side, most of the time the right.

The patient was very lethargic and irritable but well nourished. There was some serous nasal discharge. The tonsils were small; there were few cervical glands. The chest and abdomen were clear.

Neurologic examination revealed normal pupils, which reacted equally. A right sided ptosis with facial weakness was noticed. The right arm and hand were decidedly weaker than the left. The deep reflexes were increased on the right side. There was plantar reversal on the right side. There was partial flaccid paralysis of the right leg. Neck rigidity was not present, and there were no signs of meningeal irritation.

Lumbar puncture was done on admission; the fluid was exceedingly bloody. This was repeated a few hours later; the fluid was still bloody. Fluid from cistern puncture was found to be the same color as fluid from lumbar puncture. A pressure of 15 cm. of water was registered. Lumbar puncture, repeated August 21, 26 and September 5, showed a range in pressure from 8 to 10 cm. of water. On repeated tap, the fluid became less bloody.

September 12, lumbar puncture was repeated and revealed spinal fluid with a xanthochromic tinge. The fluid contained 10 cells and an increase of globulin (?).

The child's general condition improved daily and he was discharged September 22, apparently without residuals. He was seen recently in the Children's Hospital clinic and apparently has recovered entirely.

Examination of the urine was negative. Examination of the blood showed: red blood cells, 3,100,000; hemoglobin, 60 per cent; white blood cells, from 3,600 to 4,000; neutrophils, 49 per cent; basophils, 3 per cent; eosinophils, 2 per cent; lymphocytes, 38 per cent; large mononuclears, 4 per cent; transitionals, 4 per cent. The tuberculin test was negative. Wassermann tests of the blood and spinal fluid were negative.

CASE 10.—A white woman, aged 24, seen through the courtesy of Drs. Ravine and Weiss, had become ill with mild gastro-intestinal symptoms and fever about Nov. 1, 1932. She later became somnolent and one week after the onset was admitted to the Jewish Hospital. At that time the spinal fluid contained 28 lymphocytes. Two days later the patient developed meningeal signs, with weakness of the right side of the body. Cistern and lumbar punctures showed bloody and xanthochromic spinal fluid. The temperature ranged from 102 to 103 for several days.

Neurologic examination showed bilateral choked disk, paralysis of the right side of the body, neck rigidity, positive Kernig sign, and a positive Babinski reflex on the right side. There were also plantar reversal signs on the left side as well as on the right. Abdominal reflexes were absent on the right and diminished on the left.

When last seen, November 14, spinal puncture was repeated and revealed a xanthochromic spinal fluid with slight increase in globulin; the Wassermann reaction was negative and there was a negative gold curve. The patient's condition grew steadily worse and she died six weeks after the onset of acute symptoms.

CASE 11.—A white baby girl, aged 8 months, admitted to the General Hospital, Aug. 22, 1932, with a diagnosis of acute anterior poliomyelitis, became ill, Friday, August 26, at which time stiffness of the neck was noted. In addition, the parents thought there was evidence of a slight cold. Sunday, August 28, paralysis of the left arm was noticed; September 1, paralysis of the right arm supervened.

The patient was irritable and restless for two days before admission and vomited the day before admission.

Examination did not reveal any abnormalities of the cranial nerves. The pupils were regular and reacted to light and in accommodation. There was no strabismus and no nystagmus. The extra-ocular muscles were normal. Facial asymmetry was not present. There was weakness and flaccid paralysis of both upper extremities. Abdominal reflexes were hyperactive bilaterally. Reflexes were present in the lower extremities.

On admission, the spinal fluid was clear and contained 10 cells. The following day the puncture was repeated and the fluid was found to be slightly blood tinged. The cell count was 82. Repeated spinal punctures showed an increase in globulin, and the cell count varied between 10 and 15 cells.

September 12, an external strabismus of the left eye was noted. This strabismus had cleared up at the time of discharge. The child had also regained most of the function in the upper extremities at this time. The patient recovered completely.

Laboratory examination revealed: white blood cells, 15,000; polymorphonuclears, 45 per cent; lymphocytes, 49 per cent; large mononuclears, 6 per cent. Examination of the urine was negative. Wassermann tests of the spinal fluid and of the blood were negative.

CASE 12.—A white boy, aged 2½ years, was admitted to the hospital, Nov. 15, 1932, chiefly because of convulsions. In the middle of July the parents noted that the child would make peculiar facial movements and draw his arms in "spasms" at times. About September 1, the child began having definite convulsions, characterized by falling, unconsciousness, twitching of the face, rolling of the eyes, gritting of the teeth and expression of saliva. Convulsions occurred five and six times daily, usually at night, lasting about one minute. The child was unable to walk for a month previous to admission. It was noticed that the right leg and arm were paretic at that time.

The child's past history is without incident and he apparently developed in normal fashion. The only diseases in the past

were German measles (?), a probable drug eruption while taking medicine for his convulsions, and otitis media followed by myringotomy in April, 1932. The child walked at the age of 11 months, talked at 1 year, talked well at 2, and now is only able to mumble.

He was in the Cincinnati General Hospital in September, 1932, for observation. He was regarded as epileptic and was discharged after a few days.

The child was pathologically happy; he was undisturbed by an examination and did not seem to mind the Wassermann needles, throat smears, and the like. Right sided convulsions occurred, lasting one minute, in which the eyes turned to the left. He was unable to talk; he merely mumbled.

Results of the neurologic examination were as follows: 1. The fundi were found to be normal by Dr. Ray. 2. The extra-ocular muscles appeared not to act synergistically. 3. There was right facial and lingual weakness. 4. The right side presented hyperactive deep reflexes, diminished abdominal reflexes, a few beats of ankle clonus, and plantar reversal. There was also a suggestive Babinski reflex on the left. 5. There was marked euphoria. The child did not cry throughout the entire examination. 6. The gait was extremely "wobbly" and there was some truncal ataxia and circumduction of the right leg. The right arm was apparently ataxic.

A spinal puncture was performed. The fluid was clear, registering a pressure of 16 cm., 8 cells, sugar +, globulin —.

Examination of the blood showed: red blood cells, 5,200,000; hemoglobin, 90 per cent; white blood cells, 9,100; polymorphonuclears, 40 per cent; eosinophils, 1 per cent; lymphocytes, 53 per cent; transitionals, 6 per cent.

Urinalysis was negative.

Röntgen examination showed separation of the suture lines (progressive on subsequent plates).

Ventriculography showed a failure of proper filling of the left anterior horn.

The case was diagnosed as brain tumor, and a craniotomy was performed. When the dura was opened, the brain was seen to be inflamed and cherry-red. The patient died a week later. Sections of the brain disclosed marked glial reaction with neuronophagia.

CASE 13.—A white youth, aged 19, entered the hospital, Nov. 25, 1932, in coma. On the day of admission to the hospital he arose and pursued his work as a baker as usual. He left his home without complaints. About 2 p. m. he began to complain of occipital headache, blurring of vision and diplopia. He went home, vomited and lapsed into coma.

The patient was strong and well developed. He was lying in bed in a semicoma. The neck was retracted. There was an external squint of the right eye. The disks showed early choking. There was no nystagmus. Other cranial nerves appeared normal. The Brudzinski signs were positive; the Chvostek signs, negative. The Kernig sign was positive bilaterally. The deep reflexes were equal and hyperactive. The abdominal and cremasteric reflexes were present. The Babinski and Chaddock signs were positive bilaterally.

A lumbar tap released grossly bloody fluid under more than 30 cm. pressure.

Blood examination revealed: red blood cells, 4,800,000; white blood cells, 10,500. The Wassermann test of the blood was negative.

Urinalysis was negative.

A spinal fluid count, November 26, showed: red blood cells, 232,000; white blood cells, 350; polymorphonuclears, 85 per cent; lymphocytes, 14 per cent. December 2: color, xanthochromic; pressure, 14 cm.; red blood cells, 220; lymphocytes, 60 per cent; globulin, + + + +. December 4: color, xanthochromic; pressure, 12 cm.; red blood cells, 330; white blood cells, 160; globulin, + + + +.

The patient made a complete recovery, the spinal fluid gradually becoming clear.

CASE 14.—A white boy, aged 10 years, was admitted to the Bethesda Hospital, Nov. 9, 1932, forty-eight hours after an attack of vomiting and unconsciousness while at school. The vomiting continued for twenty-four hours. The day before admission the mother noted that the child's neck was stiff and sore.

The neck was rigid. The Brudzinski and Kernig signs were positive, with a suggestive Babinski reflex and increased knee jerks.

The spinal fluid on admission was bright red, with blood + + + +. There was no sugar. The spinal fluid the next day was moderately red, with blood + +.

The patient was dismissed after ten days of hospitalization and seemed to have completely recovered.

CASE 15.—A Negro, aged 52, entered the hospital in coma shortly before noon, Dec. 9, 1932. The history given by his wife revealed a fulminating illness. On the night before admission the patient retired as usual and appeared to be in excellent health. On arising in the morning, he complained of a gnawing epigastric pain and started for the bathroom.

His wife noticed that he staggered, and he told her that he could not see. His vision soon returned; he took some sodium bicarbonate for his stomach. He vomited once or twice and returned to bed. His wife went to work and was called home at 9:30 a. m.—about two hours later—because of the gravity of the patient's symptoms. At this time he was totally unconscious and had had one generalized convulsion. The convulsions continued at irregular intervals and the patient failed to regain consciousness.

On examination in the hospital shortly before noon, the patient was in deep coma. His neck was somewhat stiff and turned slightly to the right. The Brudzinski and Kernig signs were slightly positive. The pupils were contracted. There was nystagmus to the right and hyperreflexia of the deep reflexes in the upper extremities and a reflexia in the lower extremities. Abdominal and cremasteric reflexes were absent. There was no plantar response. A lumbar tap released bloody fluid under normal pressure which contained 190 white blood cells, 80 per cent lymphocytes, 20 per cent polymorphonuclears and 2,500 red blood cells.

Systemic examination was without noteworthy results.

The patient failed to rouse from his coma; he had thirteen generalized convulsions and died about two hours after admission. The duration of his illness was about seven hours altogether.

At necropsy, the viscera showed few changes. Small healed tuberculous lesions were present in both apices. There was marked congestion of the kidneys and slight congestion of the liver.

On removal of the calvarium, a slightly tense dura was found. A moderate amount of clear fluid was seen in the subarachnoid space. The pia-arachnoid over the entire brain was slightly clouded, more at the base and most marked over the cerebellum and sylvian fissures. Congestion on the surface of the brain was most striking, even the small capillaries and venules appearing quite prominent over the surface. Cut section of the brain revealed prominent vascular markings without petechiae. The same condition obtained in the spinal cord, where the gray matter stood out prominently and was pink, rather than normally gray, because of its congestion. The venous sinuses, paranasal sinuses and middle ears were found to be normal. Microscopic section revealed lymphocytes in the pia as well as perivascular lymphocytes in the temporal lobe.

CASE 16.—A white man, aged 57, was admitted to the hospital, Dec. 10, 1932, in deep stupor. The patient lived in a factory in the downtown district, where he was a watchman. December 9, when his boss left for home, the patient seemed to be in entirely good health. When the boss returned the following morning, December 10, he found the patient to be extremely listless and lethargic. As the day wore on, the lethargy progressed to somnolence. The patient fell asleep when not prodded into wakefulness. He was brought to the receiving ward in the middle of the afternoon. Sugar and a trace of acetone were found on urinalysis, and the patient was admitted for impending diabetic coma.

The past history was not relevant.

He appeared to be well developed and nourished when he was seen lying in bed, asleep. Respirations were regular, deep and of average rate. The Kussmaul phenomenon was not present. The neck was somewhat retracted, without opisthotonos. The patient could be roused on stimulation and would be able to answer questions intelligibly for a few moments, but his

attention would soon fall away, his eyes would close and he would be asleep again. This was repeated many times. In lucid moments he was found to be oriented for time and place, but free of delusions or hallucinations.

Systemic examination proved entirely negative. The blood pressure was 130 systolic, 70 diastolic.

On neurologic examination the fundi were normal. There was ptosis of the right eyelid. The pupils were equal, round and reactive. The extra-ocular muscles were normal. There was weakness of the left side of the face and tongue. There was slight hyperreflexia on the right side, with a few beats of ankle clonus and a positive Oppenheim sign. The abdominal reflexes were all absent; the cremasteric reflexes were present bilaterally. There was eversion of the right foot in repose. The Brudzinski sign was positive. The Kernig sign was positive bilaterally.

A lumbar tap released blood-tinged fluid under normal pressure, which contained 32,000 red blood cells and 120 white cells per cubic millimeter.

On admission the white blood count was 14,000; three days later it was 8,200.

The patient improved daily, so that a week after admission he was far less somnolent, took food avidly and became almost completely oriented; he was amnesic concerning the first three or four days of his illness. Daily spinal taps for four days showed a gradual diminution in blood, so that on the fourth day the red blood count was 3,000 and the white blood count, 30. The patient was febrile for the first five days, with a temperature never exceeding 101 F.

Two monkeys were inoculated intravenously with 100 cc. each of the patient's spinal fluid on the second day. The monkeys were apparently without symptoms fourteen days later.

About two weeks after admission, the patient was allowed to get up. He was soon found to be meddlesome and noisy in the ward. He became overbearing, assertive and somewhat euphoric. His memory and calculation seemed to be impaired. Affective lability, chiefly bellicosity, began to assert itself, and it became necessary to transfer the patient to the psychiatric service, where he continues to show mood disturbances, is extremely argumentative and is willing to fight with every one.

CASE 17.—A white girl, aged 2½ years, born at full term and normally developed, was playing about her home on the afternoon of Jan. 5, 1932, and appeared to be in entirely good health. About 6 p. m. she complained of abdominal pain and she vomited. These symptoms increased in severity and at about 10:30 she had generalized convulsions. Home remedies and enemas failed to alleviate the condition, and Dr. Kurz was called at 2 a. m. He found the child in profound coma, sweating profusely. Respirations were deep, rapid, regular and noisy. The axillary temperature was 103 F. A tachycardia was present. No other systemic pathologic changes were found. The neurologic examination revealed constricted equal pupils, which reacted sluggishly to light, showed a lateral nystagmus, and gave no signs of meningeal irritation. Waves of cyanosis passed over the child's skin as he was observing her. She died on the way in the Cincinnati General Hospital. She was pronounced dead at 4 o'clock in the morning. The duration of symptoms from the onset was only ten hours.

The coroner's autopsy revealed that the liver was yellowish brown and friable. The edges everted on section. Except for a large amount of mucus in the descending colon, the mucosa of the entire gastro-enteric tract appeared normal.

The kidneys were slightly swollen. The edges everted on section. The cortices had a pasty yellow color.

The usual incision through a normal scalp and calvarium revealed a slightly distended dura. When the dura was opened, a large, soft, extremely injected brain was seen. There was some flattening of the convolutions and narrowing of the sulci. The pia-arachnoid membrane appeared somewhat thickened in areas, and the spinal fluid was very slightly clouded. No tubercles were found after careful search. On horizontal section of the brain the gray matter was seen to be moderately swollen and had a peculiar bluish-gray appearance. The vessels through the white matter were markedly congested, but no definite petechiae were found. There was no fracture of the skull.

Microscopic section of the brain showed lymphocytosis in the pia with perivascular edema in the brain.

CASE 18.—A white girl, aged 11 years, Jan. 12, 1933, complained to her mother of being sick at her stomach. She vomited five times in the afternoon of that day. During the night the vomiting ceased, but the patient was restless throughout the night. Toward morning, facial convulsions were noted and the patient was in coma the entire day and was brought to the hospital, Jan. 13.

There had been no recent illness; the past history was not relevant.

On admission, neurologic examination showed blurring of the disks, but the pupils were equal and reacted. There was slow floating lateral nystagmus with occasional lack of synergistic eye movement. The deep reflexes were equal and active in the upper extremities, and equal and hyperactive in the lower extremities with a few beats of ankle and patellar clonus. Abdominal reflexes were absent. The toes of the patient's feet were chronically in the Babinski position, and this was accentuated on plantar stimulation. There were marked Kernig and contralateral Brudzinski signs.

On admission, the temperature was subnormal and rose rapidly to 104.5; it returned to normal within two days. The patient remained in coma for thirty-six hours after admission and awoke feeling entirely well. There was no residual headache or any other complaints.

After a convalescence of about ten days the patient was discharged from the hospital completely well, without residual neurologic changes. At no time did systemic examination reveal any pathologic changes.

A lumbar puncture was performed on admission, January 13. The fluid showed normal pressure, 100 white cells, 35 red cells, and an increase in globulin.

January 14, the spinal fluid pressure was normal, with 110 white cells, 215 red cells and globulin increased.

January 15, the white blood cells numbered 88, the red 22; globulin was increased. The spinal fluid and blood Wassermann tests were negative.

January 15, the blood sugar was 104. Spinal fluid sugar taken simultaneously was 64, establishing a ratio of 60 per cent.

Spinal puncture was not done before the patient was discharged.

CASE 19.—A male patient entered the hospital, Jan. 1, 1933, in coma. The onset occurred five days previously. Dec. 27, 1932, he had a frontal headache and was restless. This continued until after admission, when he became extremely drowsy, vomited and had convulsions of five minutes' duration each, which was followed by coma.

When seen on admission, the patient was in coma and was extremely resistive and restless. He vomited once and had three involuntary stools. There were signs of marked meningeal irritation. Bilateral plantar reversal signs were present. The temperature was subnormal on admission but soon rose to 102 F.

On the morning following admission, January 2, the patient was conscious, mentally clear, drowsy, complained of frontal headache and was amnesic; he had been amnesic since the onset of the convulsions. At that time, examination showed slight weakness of the left arm and face and parietal eversion of the left foot, slight diminution of the abdominal and cremasteric reflex on the left, and a positive Strümpell sign on the left. The patient's headache cleared within a few days and he has been convalescing without incident in the hospital since that time.

The temperature reached normal within two days and has remained so.

Examination of the spinal fluid on admission showed clear fluid, an excess of globulin, and 262 white blood cells.

January 7, the fluid was uniformly bloody, globulin increased, and white blood cells numbered 332 and red blood cells 13,000.

January 9, the white blood cells numbered 148; red blood cells, 1,850.

January 12, the fluid was slightly xanthochromic, the globulin increased; white blood cells numbered 145; red, 8.

January 12, the blood sugar was 90. Spinal fluid sugar taken simultaneously was 61 mg., establishing a ratio of 66 per cent.

The Wassermann test for both blood and spinal fluid was negative. Blood culture was negative.

CASE 20.—A Negro girl, aged 4 years, was first admitted to the Cincinnati General Hospital, April 15, 1932. At that time she had had two convulsions. She remained in the hospital for a few days and was discharged, apparently well.

She was again admitted to the hospital, Jan. 10, 1933. She had been well from the time of her first admission to the time of the present admission, at which time she was suffering with generalized convulsions, frothing at the mouth and biting of the tongue. The convulsions were generalized in character, although there was more jerking on the left side of the body than on the right. The head and eyes were turned toward the right. The pupils were unequal, the right being larger than the left; both reacted to light. Corneal reflexes were absent. There was spasm of the orbicularis on the left side. Deep reflexes were not obtained. Abdominal reflexes were absent. There were no signs of plantar reversal.

The spinal fluid was under normal pressure and showed an excess of globulin. Two counts of the spinal fluid were made. The first count showed 22 white cells and another count showed 26, predominantly lymphocytes.

The patient died within fourteen hours after admission.

Microscopic sections of the brain showed perivascular degeneration of the brain with glial reactions.

This case will be dealt with more in detail in a later paper.

COMMENTS

Clinical data so far suggest that in this epidemic there are three types of cases:

1. A group represented by serous infiltration with clinical meningo-encephalitic signs plus increase in globulin in the spinal fluid.

2. A group that shows clinical meningo-encephalitic symptoms with lymphocytosis in the spinal fluid.

3. The most severe form of the disease is represented by those cases in which hemorrhage occurs in the spinal fluid accompanied by increase in globulin; also increase in lymphocytes in the spinal fluid.

Discussion as to etiology is purely speculative at present. In the beginning of the epidemic, both infectious and toxic origins were suggested. The disease was not socially stratified, as one would expect in an epidemic due to the ingestion of a toxin such as was observed during the epidemic of so-called jake paralysis. It is my opinion that the disease is infectious in origin.

When I first began to see this disease I suspected almost every case of organic brain disease of being encephalitis. Several mistakes were made in diagnosis for this reason. A study of these mistaken diagnoses represents pretty well the differential diagnosis of the disease. Differential diagnosis must be made from (1) cerebral arteriosclerosis with hemorrhage; (2) meningeal hemorrhage due to rupture of a syphilitic aneurysm; (3) idiopathic meningeal hemorrhage as a result of status thymicolymphaticus, of which I have seen three cases; (4) brain tumor with hemorrhage from the tumor, which must be considered, although this was not encountered in our mistakes in differential diagnosis; (5) skull fracture with meningeal hemorrhage, which is also to be considered, although this can be easily eliminated with history and roentgen studies.

Our mistakes in diagnosis enabled us to reason better concerning our clinical cases which went on to recovery. In these cases syphilis has been excluded by negative Wassermann tests, tuberculous meningitis has been excluded by the clinical outcome, and arteriosclerosis has been excluded by physical and urinary examination.

SUMMARY

The twenty cases reported were of an unusual type of encephalitis. Hemorrhage into the spinal fluid was a

prominent feature, occurring in thirteen of the twenty cases in my series. The spinal fluid pressure was definitely increased in only three cases. A lymphocytosis was observed in seven cases. Increase in globulin was noted in five cases in which no bleeding occurred into the spinal fluid. This suggests a serous infiltration in those cases with perhaps increased permeability of the pial vessels, which in more severe forms allowed blood cells both red and white, as well as serum, to escape from the blood vessels.

Somnolence, at times deepening into coma, was a prominent feature, occurring in twelve of the series of my twenty cases. Coma was observed in nine cases. Double vision occurred in six of the twenty cases. Pyramidal signs constituted a prominent feature, occurring in fourteen of the twenty cases. This is in marked contrast to the cases observed in the epidemic of so-called lethargic encephalitis, in which extrapyramidal signs were more commonly observed than pyramidal signs. Another marked difference in the cases noted in this series from those of epidemic encephalitis is that in the present series no extrapyramidal residuals have so far been noted.

Convulsions beginning with jacksonian symptoms passing into generalized convulsions were observed in seven cases, bespeaking motor cortex irritation; death occurred in nine cases; congestion of the disks occurred in seven cases, and a choked disk was observed in two cases.

903 Carew Tower.

Clinical Notes, Suggestions and New Instruments

ELECTROCAUTERIZATION OF THE CERVIX IN CHILDREN

BERNARD NOTES, M.D., WASHINGTON, D. C.

Clinical Instructor in Obstetrics and Gynecology, George Washington
University School of Medicine

A complete review of the literature¹ reveals but one mention of cauterization of the cervix in children. The present communication is based on fifty cases in which this procedure was done during the past four and a half years in the gynecologic service of Dr. E. W. Titus in the Children's Hospital, Washington, D. C.

Stein² and his co-workers emphasized the occurrence of involvement of the cervix in inflammations of the lower genital tract in children. At the Children's Hospital we had by that time (December, 1928) already begun cauterization in the cases of chronic cervicitis in which medical treatment was unavailing. More than 70 per cent of our cases were gonorrheal by positive smears, and probably 20 per cent more were of gonorrheal origin.

In our series there was practically complete cessation of all discharge in 64 per cent of the cases, marked improvement in 23 per cent, and some improvement in 13 per cent. Occasionally, two cauterizations were necessary for more complete removal of infected cervical glands. Our youngest patient in whom cauterization was done was 7 years of age and our oldest 14 years, the average being 12 years. All patients were constitutionally much improved. Menstruation did not vary from the usual in any respect. There was no case of obstructive dysmenorrhea. All patients were examined and probed postoperatively without evidence of massive scarring. There was no postoperative menorrhagia.

The method used was similar to that used in adults. Cauterizations were done under nitrous oxide-oxygen anesthesia,

small Sims speculums being used for exposure. Radial incisions were made so as to destroy thoroughly most of the cervical glands, stricture being avoided by not incising deeply. Of late, we have been employing cauterization in older girls (over 10 years of age) in the dispensary, using the virginal Graves speculum without anesthesia.

I earnestly recommend the use of the electrocautery in children with chronic cervicitis when the disease has become chronic from neglect and the active focus is in the glands of the cervix, and there is persistent discharge of mucus. I believe it eminently safe and helpful.

1801 Eye Street N.W.

METHYLENE BLUE SOLUTIONS IN THE TREATMENT OF CARBON MONOXIDE POISONING

J. C. GEIGER, M.D., San Francisco
Director of Public Health

Recent press dispatches have reported the use of methylene blue solutions in the treatment of cases of carbon monoxide poisoning in San Francisco. This brief note is presented for the purpose of correcting certain statements made in the newspapers and of clarifying impressions that may have been gained from reading these news stories.

Following shortly the recommendation that intravenous injections of methylene blue (1 per cent aqueous solution, antoclaved at 15 pounds pressure for fifteen minutes) might well be used in the treatment of cyanide poisoning, the suggestion was made, on the basis of certain experimental work done by Dr. M. M. Brooks, that the same form of treatment might rationally be administered in cases of carbon monoxide poisoning. In four instances, thus far (late in January, 1933), the method has been tried in the Emergency Hospital Service of the San Francisco Department of Public Health. In two of the four instances, cyanide poisoning was present. The first of these has been reported.¹ While cyanide was present in the stomach contents of the second would-be suicide, there were no apparent signs of fully developed cyanide poisoning. (no cyanosis, no marked disturbance of heart beat or respiration). Gastric lavage was fortified by the intravenous injection of 50 cc. of the methylene blue solution, and there were no remarkable developments except that the young woman "completely recovered." Had treatment been instituted after a longer interval, which would have permitted the absorption of sufficient quantities of cyanide to produce demonstrable signs of cyanide poisoning, the effects of methylene blue might have been as dramatic and convincing as in the first case (C. R.); but it must be admitted that this second case did not offer the same, or even a comparable, opportunity for a clinical test.

The third recorded case in San Francisco in which methylene blue was used was as follows:

A. M., a man, attempted suicide, Dec. 20, 1932, utilizing the exhaust from a motor car. A flexible tube was used to convey the gases from the exhaust of the motor to the closed body of the car. A meter reader of the Pacific Gas and Electric Company (Mr. Donald Coll) found the patient in the latter's private garage. He was sitting in the car with the motor running. Although the man was unconscious and apparently lifeless, he was quickly removed to the open air and was given artificial respiration by Mr. Coll. The Emergency Hospital Service received a call for an ambulance at 2:40 p. m. and augmented the artificial respiration with the inhalator (using carbogen) at 2:45 p. m., and this was continued for a period of twenty minutes. The steward's report (R. L. Nelson) states that: "On arrival of the ambulance, all clinical signs of life were negative, no radial pulse, no apparent heart sounds, respiration had entirely ceased, pupils dilated and fixed, deep 'blue' cyanosis, profound rigor of neck and body muscles and chest rigid, making it very difficult to give artificial respiration. . . . It was fully four or five minutes before any reaction took place. When the patient was removed from the street [to the Park Emergency Hospital] his pulse was 80, full and forcible, respiration about 14, and a very small amount of cyanosis."

1. Notes, Bernard: Urethrovulvovaginitis, *Arch. Pediat.* 58, January, 1930.

2. Stein, I. F.; Leventhal, M. L., and Sered, Harry: Cervicovaginitis, *Am. J. Dis. Child.* 37: 1203 (June) 1929.

1. Geiger, J. C.: Cyanide Poisoning in San Francisco, *J.* 29: 1944 (Dec. 3) 1932.

On admission to the Park Emergency Hospital at 3:10 p. m., according to the hospital records, the patient was unconscious and had a pulse rate of 126 (of weak character), and a respiratory rate of 36. He was given 50 cc. of a 1 per cent solution of methylene blue, intravenously, and external heat was applied. "Some response" was noted after this first injection, but at 4 o'clock a second injection of 50 cc. was given "with marked result. Patient able to speak coherently. Relapse. Methylene blue 20 cc. 1 per cent at 4:30 p. m. renewed response" completes the hospital record of treatment given. The patient was removed to a private hospital the following day, at which time his condition was quite satisfactory. His attending physician expressed his opinion to the effect that he "was quite confident that his patient would not have survived had the usual treatment not been augmented by the use of methylene blue. The story of this case is presented in some detail in an effort to emphasize the importance of the use of artificial respiration, which should have recognition for the rôle played in the successful treatment of this case of what was probably carbon monoxide poisoning.

In the most recent, or fourth, case treated with methylene blue, while there was a demonstration of the almost immediate effect of the dye there was demonstrated also the definite need for more accurate data of scientific interest.

J. H., a man, who spoke only Spanish fluently and whose story it was difficult to obtain in detail, was brought to the Central Emergency Hospital, Jan. 15, 1933, in an unconscious state, from "gas poisoning." The emergency surgeon's report states that he was "cyanotic, stiff and rigid, unconscious, with glassy stare of eyes. Pulse weak and thready. Respiration shallow but present." The rate was not given. From the patient's and his roommate's story it was learned that there was an unvented gas heater in their apartment. This was lighted and the patient prepared for a bath. He remembers the bath but no incident subsequent to that until he regained consciousness in the hospital. "About thirty seconds" after the intravenous injection of methylene blue, and without the administration of any gas by inhalator, "the patient turned pink in color and started to scream, 'Turn off the gas!' Pulse became stronger, respiration more forceful, and about two minutes later we conversed together in Spanish. Conversation on his part was intelligent and coherent." The patient himself was astounded at the entire episode and believed that he had been "brought back from 'sure' death."

In these cases one cannot state positively that the cause of the condition was carbon monoxide, although, even in the absence of laboratory data, the former case was probably due to this gas. In the latter case, however, since natural gas is almost entirely free from carbon monoxide, the question arises: Was the condition due to carbon monoxide as a product of incomplete combustion in an unvented appliance, or was it due to "oxygen want" due to the presence of natural gas from a leaking appliance or from an unlighted portion of the burner?

COMMENT

The mechanism through which the dye acts is one that has not been entirely or adequately explained. All workers seem to agree that it involves the oxidation-reduction processes, but all are agreed, apparently, also, that these processes are probably quite complex and that other effects, such as stimulation of the respiratory, circulatory and heat regulatory centers, likewise enter into the complete explanation. Hanzlik² suggests also that the dye might be useful in hemorrhage and shock but that the effects would probably be fleeting in character, and the comparatively large amounts of the dye in the quantities of fluid necessary in such cases might produce deleterious results, since the dye itself possesses a certain degree of toxicity.

Methylene blue, and possibly dyes other than methylene blue, might be found useful in treating other conditions than cyanide poisoning in which the oxidation mechanisms are depressed or inhibited and the effects are apt to be permanent rather than fleeting, as they are in hemorrhage, shock, carbon monoxide poisoning, and other comparable situations. "Even in diabetes mellitus, in which the tissues may be at fault in their inability to properly oxidize sugar, it is conceivable that a dye which would satisfactorily promote oxidation (and not at

the same time be toxic when used over relatively long periods of time) might be of some value."

CONCLUSION

The use of methylene blue (methylthionine chloride, U. S. P. medicinal) in the treatment of cyanide or carbon monoxide poisoning is still in the experimental stages. Its use, in the four cases cited, shows promise, but the need for more accurate observation and more complete data is obvious.

Department of Public Health.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

H. A. CARTER, Secretary.

TITUS INTRAVENOUS INFUSION APPARATUS ACCEPTABLE

The Titus Intravenous Infusion Apparatus, designed by Dr. Paul Titus of Pittsburgh, is manufactured by Feick Brothers Company of Pittsburgh. According to the description supplied by the firm, it is an apparatus for intravenous injection of dextrose solutions consisting essentially of two parts: (1) that comprising the tank, the tuning and volume gage, the dial valve, and the base, and (2) the heating unit with infusion thermometer.

The heating unit is a half inch Pyrex glass tube with tapering end for tube connections fitted tightly into a thin aluminum sleeve around which is wound nichrome wire, having 20 ohms

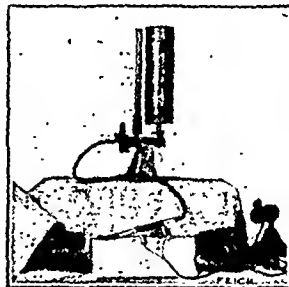
resistance, embedded in an insulating cement, and is connected as a part of tubing leading from the infusion instrument to the needle in the vein. The infusion thermometer is incorporated within the usual glass adapter for needles.

It is claimed by the manufacturer that this instrument, by regulating the rate of intravenous injection of dextrose solution closely to the physiologic ability of the body to utilize dextrose, gives the following therapeutic effects:

(a) It permits a maximum therapeutic effect from a given amount of injected dextrose by assuring maximum utilization and by preventing wasteful "spill" through the kidneys; (b) it provides accurate dosage of dextrose, since urinary loss from over-rapid injection likewise means dosage loss to an unknown degree; (c) it prevents overstimulation of endogenous insulin production, since the physiologic rate of utilization is not exceeded; (d) it prevents velocity reactions; (e) it prevents the injection of cooling or cold solutions. An additional therapeutic feature, according to the firm, is the valve of this instrument especially designed for use in giving venoclysis or "intravenous drip"; and that it also may be used for dextrose in salt solutions and acacia dextrose.

The company claims that citrated blood transfusions may be given and heated while being given. This use, according to the firm, was not the primary purpose of the instrument and its use for this purpose is not especially featured or recommended by the firm solely in order not to confuse or complicate the main issue for which the instrument was designed; namely, to eliminate the faults in the intravenous administration of dextrose.

No adjustment is required for heat control, and any interruption to the flow, such as from dislodgment of the needle, is apparent either by a glance at the gage or by the evidence of a sudden rise in temperature of the solution as seen in the infusion thermometer at the needle. The heat should be turned off until the difficulty can be found and adjusted.



Titus Intravenous Infusion Apparatus.

2. Hanzlik, P. J.: Personal communication to the author.

Overheating does not occur if the flow of fluid into the vein is proceeding properly. It can occur if stoppage of flow takes place from any cause and is not detected reasonably soon. If still undiscovered and the patient is unconscious, the needle becomes hot and the skin could be blistered.

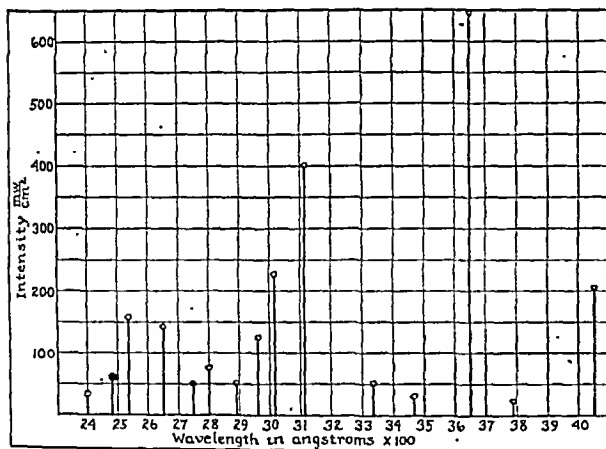
There is no occasion for such stoppage to go undiscovered, writes the company, if the person supervising the injection tests the flow rate by watching the gage as described, at frequent intervals, or if he reads the infusion thermometer at the needle at the same intervals. Overheating cannot go undiscovered if thermometer readings are made, and if the patient is conscious even this is not entirely necessary. If the patient is unconscious, the injections and the patient should not be left alone for this and other equally obvious reasons.

The Council investigated the apparatus. It holds 500 cc. of fluid. The opening in the container for the solution is large and unless covered with a sterile towel or gauze is a theoretically potential avenue for infection from droplets suspended in the air. Once the apparatus is taken from its sterile covering and the solution is running, any adjustments of the dial might contaminate that part and the directions specify that the valve face should be wiped with an alcohol sponge before such adjustments are made.

It is agreed that no mention in advertising matter will be made of dextrose compounds or any other medicaments that have not been accepted by the Council on Pharmacy and Chemistry. In accordance with the aforementioned, the Council on Physical Therapy declares the Titus Intravenous Infusion Outfit acceptable for inclusion in its list of accepted devices.

BURDICK SUPER-STANDARD AIR-COOLED LAMP

The Super-Standard Air-Cooled Lamp, manufactured by the Burdick Corporation, Milton, Wis., was accepted in a report published in *THE JOURNAL*, July 30, 1932, page 388. At that time the emission characteristics were not available. In the



Spectral energy distribution of the Super-Standard Air-Cooled Lamp.

meantime the firm has obtained the measurements in a laboratory acceptable to the Council. The data presented are on the basis of the filter method recommended by the International Congress of Light.

Super-Standard Air-Cooled Lamp, Type A-985 Burner in Casing

A. Intensity through filters:	Mm.	Mw. Cm. ²
1. Without any filter.....	838 X 14.29	11,975
2. With Noviol-A and water cell....	134	1,915
3. With Barium Flint and water cell..	224	3,201
4. With Pyrex Glass and water cell..	252	3,601
B. Intensities of spectral regions:		Mw. Cm. ²
1. Total (no filter).....		11,975
2. 2,000 A — 2,804 A.....		527
3. 2,894 A — 3,132 A.....		806
4. 3,342 A — 4,047 A.....		976
5. 4,060 A — 5,790 A.....		1,516
6. 5,790 A — 14,000 A.....		760
7. 14,000 A — 120,000 A.....		7,222

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

DIPHTHERIA TOXIN-ANTITOXIN MIXTURE (See New and Nonofficial Remedies, 1933, p. 375).

Hixson Laboratories, Inc., Johnstown, Ohio.

Diphtheria Toxin-Antitoxin Mixture, 0.1 L+.—Each cubic centimeter represents 0.1 L+ dose of diphtheria toxin neutralized with the proper amount of diphtheria antitoxin obtained from the horse; preserved with merthiolate 1:10,000. Marketed in packages of three 1 cc. vials, in packages of one 10 cc. vial, and in packages of one 30 cc. vial.

Diphtheria Toxin-Antitoxin Mixture, 0.1 L+ (Sheep).—Each cubic centimeter represents 0.1 L+ dose of diphtheria toxin neutralized with the proper amount of diphtheria antitoxin obtained from sheep; preserved with merthiolate 1:10,000. Marketed in packages of three 1 cc. vials, in packages of one 10 cc. vial, and in packages of one 30 cc. vial.

DIPHTHERIA TOXOID (See New and Nonofficial Remedies, 1933, p. 384).

Hixson Laboratories, Inc., Johnstown, Ohio.

Diphtheria Toxoid.—Prepared from diphtheria toxin by treatment with 0.4 per cent solution of formaldehyde at a temperature of 40 C. until its toxicity is so reduced that 5 cc. will not cause early or late symptoms of diphtheria poisoning in a guinea-pig under observation for thirty-five days. The product is tested for antigenic potency by injecting guinea-pigs with varying doses and testing the resistance of these guinea-pigs to five minimum lethal doses of diphtheria toxin given six weeks after the dose of toxoid. If 80 per cent of these pigs survive for ten days, the product is considered satisfactory. Merthiolate 1:10,000 is used as preservative. Marketed in packages of two 1 cc. vials, in packages of twenty 1 cc. vials, in packages of one 10 cc. vial, and in packages of one 30 cc. vial. All packages are accompanied by vials containing diluted toxoid for carrying out reaction tests.

POLLEN ANTIGENS-LEDERLE (See New and Nonofficial Remedies, 1933, p. 31).

The following product has been accepted:

Plantain Pollen Antigen-Lederle.

METRAZOL (See New and Nonofficial Remedies, 1933, p. 301).

The following dosage form has been accepted:

Metrazol Solution 10 per cent: An aqueous solution containing metrazol, 0.1 Gm. per cubic centimeter.

Committee on Foods

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

EATMOR CRANBERRIES GENERAL ADVERTISING

Sponsor.—American Cranberry Exchange, New York City.

Description.—Superior grades of fresh cranberries of various varieties bearing the trade mark "Eatmor" on the container label.

Culture, Harvesting, Shipment and Storage.—The cranberries are grown on waste, bog or marsh land. The cranberry vine spreads over the ground. Upright stems (from 4 to 10 inches long) from the vines bear the fruit, which carry from one to seven cranberries each. The vines bloom in June; the fruit is harvested in September.

There are many varieties of cranberries, which vary in size, shape, color and keeping qualities; the predominant varieties are: "Early Blacks," "Howes," "Jerseys," "McFarlins," "Bell"

and "Cherry," "Centennials," "Scarls Jumbos" and "Champions." The cranberries of each variety vary in size and color. The sales companies composing the exchange have established carefully defined grades for each variety. A separate brand is applied to each grade of each variety and each brand and grade are carefully described in a small catalogue published by the exchange. The better grades of the various varieties bear the trademark "Eatmor" on the container label. This trademark is the retail dealers' and consumers' guide to the better grades of cranberries.

The cranberries are shipped to all parts of the United States and Canada in boxes and are on sale by September. Cranberries should be stored in a dry atmosphere at a uniform moderately cold temperature.

Analysis.—

	per cent
Moisture	88.5
Solids	11.5
Ash	0.2
Protein (N X 6.25).....	0.4
Fat (ether extract).....	0.4
Reducing sugars as invert.....	4.2
Pectin	0.5
Crude fiber	1.6
Total carbohydrates other than crude fiber (by difference).....	9.9
Acidity as citric acid.....	1.9-2.7
Alkalinity of ash (cc. N alkali per 100 grams sample).....	2.2-3.0 cc.

Mineral analysis

	per cent
Calcium (Ca)	0.013
Magnesium (Mg)	0.005
Potassium (K)	0.053
Sodium (Na)	0.002
Phosphorus (P)	0.008
Chlorine (Cl)	0.004
Sulphur (S)	0.005
Iron (Fe)	0.0002
Copper (Cu)	0.0002
Manganese (Mn)	0.0006
Iodine (I)	25-138 parts per billion

Calories.—0.5 per gram; 14 per ounce.

Vitamins.—

A (+). Approximately 1.2 rat units (Sherman and Burtis) per gram.

B, D and G. Not present in measurable amounts.

C (+). The fresh cranberry is a good source of this vitamin, about 3 to 4 Gm. daily giving full protection from scurvy and promoting normal growth in guinea-pigs (Sherman, La Mar and Campbell). About 80 per cent of the vitamin of fresh fruit is retained in whole fruit cranberry sauce.

Claims of Distributors.—Eatmor Cranberries may be used for the preparation of many appetizing, tart and colorful desserts, cocktails, sauces, pies and pastries. The usual portion of cranberries has little effect on the alkaline reserve of the body.

JUMBO MORNINGSTAR PURITY BREAD MORNINGSTAR LOAF (SLICED)

Manufacturer.—Hagerty Baking Company, Philipsburg, Pa.

Description.—These breads are the same product as Sally Ann Bread (THE JOURNAL, July 30, 1932, p. 390).

FANT'S BIRTHDAY SELF RISING FLOUR (Matured, Bleached) (Contains Phosphate, Soda and Salt)

FANT'S READY TO BAKE SELF RISING FLOUR

(Matured, Bleached) (Contains Phosphate,
Soda and Salt)

Manufacturer.—Fant Milling Company, Sherman, Texas.

Description.—Self rising flours containing blended "hard" and "soft" short patent flours, salt, calcium acid phosphate and baking soda; bleached.

Manufacturer.—The ingredients are mixed in definite proportions in a batch mixer and automatically packed in cotton sacks. The flour is bleached with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour) and nitrogen trichloride (one-ninth ounce per 196 pounds).

Claims of Manufacturer.—Self rising flours for home baking of biscuits, pastries and cakes.

GENERAL ADVERTISING FOR "OCEAN CLEAR LIVE LOBSTERS"

Distributor.—Consolidated Lobster Company, Gloucester, Mass.

Description.—Live lobsters packed in rockweed and ice in barrels.

Analysis.—

Composition of Fresh Lobster

No. of Analyses	Water, Per Cent	Protein (N X 6.25), Per Cent	Fat, Per Cent	Total Carbohy- drates, Per Cent	Ash, Per Cent
Edible portion:					
Minimum 5....	68.6	11.6	1.5	...	1.6
Maximum 5....	84.3	25.4	2.5	0.9	4.0
Average 5....	79.2	16.4	1.8	0.4	2.2

(Tressler, D. K.: Marine Products of Commerce, Chemical Catalog Company, 1923.)

Iodine (parts per million) 1.38

Lobster is highest in iodine content of any known sea food.

(United States Department of Fisheries, Document 1000)

Calories.—(average of edible portion)

0.9 per gram; 26 per ounce.

Claims of Manufacturer.—The live lobsters are kept in sanitary ocean water until time of shipment. A rich source of food iodine.

WARD'S TIP TOP BREAD

Manufacturer.—The Ward Baking Company, New York City.

Description.—A white bread made by the straight dough method (method described in THE JOURNAL, March 12, 1932, p. 880); prepared from flour, water, condensed skim milk, sucrose, shortening, salt and yeast.

Claims of Manufacturer.—Conforms to the United States Department of Agriculture definition and standard for white bread.

PARADISE ISLAND BRAND HAWAIIAN FINEST QUALITY PINEAPPLE

(Sliced)

(Fancy Quality; Vacuum Packed) Dole 1

PARADISE ISLAND BRAND HAWAIIAN FINEST QUALITY PINEAPPLE

(Crushed)

(Fancy Quality) Dole 1

PARADISE ISLAND BRAND HAWAIIAN FINEST QUALITY PINEAPPLE

(Tidbits)

(Fancy Quality; Vacuum Packed) Dole 1

Manufacturer.—Hawaiian Pineapple Company, Ltd., San Francisco.

Description.—"Dole 1" or "grade 1": The appearance and flavor are the best of the three grades packed.

Sliced: Canned slices of pineapple, uniform in size and color, packed in concentrated pineapple juice syrup with added cane sugar (25 per cent sugar).

Crushed: Canned crushed pineapple prepared from the same pineapple material as the sliced but in crushed form; packed in concentrated pineapple juice syrup sweetened with added sucrose (25 per cent sugar).

Tidbits: Canned tidbits prepared from the same fruit as the sliced pineapple but cut into small uniform sections; packed in concentrated pineapple juice syrup, sweetened with added sucrose (25 per cent sugar).

Manufacturer.—The pineapples are picked at a definite stage of ripeness when the flavor is at its best. The crowns are cut off; the fruit is graded as to size and immediately shipped to the cannery near Honolulu, where it is distributed to special machines ("Ginaca" machines) of which there are three sizes, each cutting the pineapple to a different diameter. The machines automatically "size" the pineapples or cut out cylinders of a definite diameter from the fruit, extract the core and trim off the ends. (A certain amount of choice fruit material adheres to the skin after the cylinder is cut out; this is separated from the skin by the same machine. This material is used for "crushed pineapple." All parts of the pineapple not used in canning are used for the preparation of concentrated pineapple juice, which is neutralized, filtered and concentrated.

The concentrated juice is sweetened with sucrose and is used as a syrup to add to the canned products.)

On leaving the "Ginaca" machines, the pineapple "cylinders" are transferred to canning tables, where uniformed operators wearing rubber gloves inspect the fruit and do whatever trimming is necessary. The trimmed fruit cylinders are washed with a water spray and automatically sliced. The slices are delivered to a packing table, where gloved operators select the slices for the three grades of canned products (doles 1, 2 and 3) and fill the cans. The filled cans of sliced and tidbit pineapples are subjected to a "vacuum" treatment in an automatic machine, following which each can receives a certain quantity of syrup of the sweetened concentrated pineapple juice previously referred to. The use of pineapple juice syrup gives added pineapple flavor to the product. The cans are automatically closed in a "vacuum" closing machine. No solder is used to close the cans. (The crushed pineapple is not "vacuum" packed). The sealed cans are heat processed under steam pressure and immediately cooled thereafter to about 50 C. Processed cans are inspected for any imperfections and crated for shipment.

For making the crushed pineapple, the fruit material adhering to the skins is separated by machine, in which operation the fruit is shredded. The shredded material is spread on a wide belt for inspection and any undesirable parts are removed. Crushed pineapple is also obtained from slices which are irregular in shape and therefore unsuitable for the sliced product. The slices are crushed and shredded by machine. The crushed pineapple is cooked in nickel steam heated kettles equipped with agitators and recording thermometers. The cooked material is automatically canned, sealed and cooled.

Analysis (submitted by manufacturer).—

	per cent
Moisture	83.2
Ash	0.5
Fat (ether extract).....	0.1
Protein (N X 6.25).....	0.4
Reducing sugar as invert.....	6.1
Sucrose (copper reduction method).....	6.8
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference) ..	14.7
Titrate acidity as citric acid.....	0.8
pH	3.9

Calories.—0.6 per gram; 17 per ounce.

Vitamins.—Biologic assay shows the canned pineapple to be a good source of vitamins A, B and C, practically equivalent to the fresh fruit in A and B and but slightly inferior in C.

Claims of Manufacturer.—The special "vacuum" packing retains the natural pineapple flavor. The canned product is practically equivalent to the fresh fruit in nutritional values (vitamin C slightly reduced).

TIP TOP SANDWICH BREAD (SLICED)

BAUR'S AUNT HANNAH'S BREAD

BAUR'S AUNT HANNAH'S SANDWICH BREAD (SLICED)

WARD'S PERFECTION BREAD

WARD'S SOFT BUN BREAD

WARD'S MOTHER HUBBARD BREAD

Manufacturer.—The Ward Baking Company, New York City.

Description.—White bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from flour, water, condensed skim milk, sugar, shortening, salt, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Claims of Manufacturer.—Conform to the United States Department of Agriculture definition and standard for white bread.

ARBITRATOR PATENT FLOUR (BLEACHED)

Manufacturer.—Saxony Mills, St. Louis.

Description.—An "all purpose" soft winter wheat patent flour; bleached.

Manufacturer.—Selected soft red winter wheat is cleaned, tempered, scoured and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen

trichloride (one-ninth ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour).

Claims of Manufacturer.—This flour is designed for general home baking.

NATIONAL LIVE STOCK AND MEAT BOARD TEXTBOOK: TEN LESSONS ON MEAT FOR USE IN SCHOOLS

Sponsor.—The National Live Stock and Meat Board is an organization founded to promote the interest of all branches of the live stock and meat industry. The board devotes a considerable sum of money each year in fostering scientific research. These funds are disbursed through the National Research Council.

The book gives simple educational information on the following subjects and includes six charts showing the relative nutritional values of common foods:

- Lesson 1. "Meat, Physical Structure and Chemical Composition."
- Lesson 2. "Identification and Selection of Meat."
- Lesson 3. "Principles of Meat Cookery . . . Preparation of the Tender Cuts, Roasting."
- Lesson 4. "Principles of Meat Cookery . . . Preparation of the Tender Cuts, Broiling and Pan-broiling."
- Lesson 5. "Principles of Meat Cookery . . . Preparation of the Less-Tender Cuts."
- Lesson 6. "Preparation of the Less-Tender Cuts . . . Mechanical Methods."
- Lesson 7. "Soup."
- Lesson 8. "The Value of Meat as a Food."
- Lesson 9. "Feeding the Family for Health."
- Lesson 10. "The Art of Carving."

The six charts present diagrammatically relative calory, calcium, iron and copper, phosphorus, protein and vitamin, values of certain common foods.

GOLD CHAIN EXTRA FANCY PATENT FLOUR (BLEACHED; MATURED)

Manufacturer.—Universal Mills, Fort Worth, Texas.

Description.—An "all purpose" short patent flour prepared from a blend of hard and soft winter wheats; bleached and "matured."

Manufacturer.—Selected hard and soft winter wheats are cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL.

Chosen flour streams are blended, bleached with nitrogen trichloride (3 Gm. per barrel) and a mixture of calcium phosphate and benzoyl peroxide (1/3 ounce per barrel).

Claims of Manufacturer.—For home baking.

FISHER'S CRACKED WHEAT (Selected Hard Wheat)

Manufacturer.—The Fisher Flouring Mills Company, Seattle.

Description.—Coarsely granular cracked red spring Montana and Washington wheat from which a portion of the endosperm and bran have been removed to give uniform granulation.

Manufacturer.—Selected red spring wheat is cleaned, scoured, washed, tempered, cracked between rolls, and passed through a series of purifiers and aspirators to remove light and finely divided material. The material of uniform granulation is heat treated to destroy any insect infestation and packed in bags.

Analysis (submitted by manufacturer).—

	per cent
Moisture	9.4
Ash	1.6
Fat (ether extraction method).....	1.6
Protein (N X 5.7).....	11.9
Crude fiber	2.5
Carbohydrates other than crude fiber (by difference) ..	73.0

Calories.—3.5 per gram; 99 per ounce.

Claims of Manufacturer.—Approaches whole wheat in composition.

and "Cherry," "Centennials," "Searls Jumbos" and "Champions." The cranberries of each variety vary in size and color. The sales companies composing the exchange have established carefully defined grades for each variety. A separate brand is applied to each grade of each variety and each brand and grade are carefully described in a small catalogue published by the exchange. The better grades of the various varieties bear the trademark "Eatmor" on the container label. This trademark is the retail dealers' and consumers' guide to the better grades of cranberries.

The cranberries are shipped to all parts of the United States and Canada in boxes and are on sale by September. Cranberries should be stored in a dry atmosphere at a uniform moderately cold temperature.

Analysis.—

	per cent
Moisture	88.5
Solids	11.5
Ash	0.2
Protein (N × 6.25)	0.4
Fat (ether extract)	0.4
Reducing sugars as invert	4.2
Pectin	0.5
Crude fiber	1.6
Total carbohydrates other than crude fiber (by difference) ..	9.9
Acidity as citric acid	1.9–2.7
Alkalinity of ash (cc. N alkali per 100 grams sample)	2.2–3.0 cc.

Mineral analysis

	per cent
Calcium (Ca)	0.013
Magnesium (Mg)	0.005
Potassium (K)	0.053
Sodium (Na)	0.002
Phosphorus (P)	0.008
Chlorine (Cl)	0.004
Sulphur (S)	0.005
Iron (Fe)	0.0002
Copper (Cu)	0.0002
Manganese (Mn)	0.0006
Iodine (I)	25–138 parts per billion

Calories.—0.5 per gram; 14 per ounce.

Vitamins.—

A (+). Approximately 1.2 rat units (Sherman and Burtis) per gram.

B, D and G. Not present in measurable amounts.

C (++). The fresh cranberry is a good source of this vitamin, about 3 to 4 Gm. daily giving full protection from scurvy and promoting normal growth in guinea-pigs (Sherman, La Mar and Campbell). About 80 per cent of the vitamin of fresh fruit is retained in whole fruit cranberry sauce.

Claims of Distributors.—Eatmor Cranberries may be used for the preparation of many appetizing, tart and colorful desserts, cocktails, sauces, pies and pastries. The usual portion of cranberries has little effect on the alkaline reserve of the body.

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Description.—These breads are the same product as Sally Ann Bread (THE JOURNAL, July 30, 1932, p. 390).

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FANT'S READY TO BAKE SELF RISING FLOUR

(Matured, Bleached) (Contains Phosphate,
Soda and Salt)

Manufacturer.—Fant Milling Company, Sherman, Texas.

Description.—Self rising flours containing blended "hard" and "soft" short patent flours, salt, calcium acid phosphate and baking soda; bleached.

Manufacture.—The ingredients are mixed in definite proportions in a batch mixer and automatically packed in cotton sacks. The flour is bleached with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour) and nitrogen trichloride (one-ninth ounce per 196 pounds).

Claims of Manufacturer.—Self rising flours for home baking of biscuits, pastries and cakes.

GENERAL ADVERTISING FOR "OCEAN CLEAR LIVE LOBSTERS"

Distributor.—Consolidated Lobster Company, Gloucester, Mass.

Description.—Live lobsters packed in rockweed and ice in barrels.

Analysis.—

Composition of Fresh Lobster

No. of Analyses	Water, Per Cent	Protein (N × 6.25), Per Cent	Fat, Per Cent	Total Carbo- hydrates, Per Cent	Ash, Per Cent
Edible portion:					
Minimum 5....	68.6	11.6	1.5	...	1.6
Maximum 5....	84.3	25.4	2.5	0.9	4.0
Average 5....	79.2	16.4	1.8	0.4	2.2

(Tressler, D. K.: Marine Products of Commerce, Chemical Catalog Company, 1923.)

Iodine (parts per million) 1.38

Lobster is highest in iodine content of any known sea food.
(United States Department of Fisheries, Document 1000)

Calories.—(average of edible portion)
0.9 per gram; 26 per ounce.

Claims of Manufacturer.—The live lobsters are kept in sanitary ocean water until time of shipment. A rich source of food iodine.

WARD'S TIP TOP BREAD

Manufacturer.—The Ward Baking Company, New York City.

Description.—A white bread made by the straight dough method (method described in THE JOURNAL, March 12, 1932, p. 880); prepared from flour, water, condensed skim milk, sucrose, shortening, salt and yeast.

Claims of Manufacturer.—Conforms to the United States Department of Agriculture definition and standard for white bread.

PARADISE ISLAND BRAND HAWAIIAN FINEST QUALITY PINEAPPLE (Sliced)

(Fancy Quality; Vacuum Packed) Dole 1

PARADISE ISLAND BRAND HAWAIIAN FINEST QUALITY PINEAPPLE (Crushed)

(Fancy Quality) Dole 1

PARADISE ISLAND BRAND HAWAIIAN FINEST QUALITY PINEAPPLE (Tidbits)

(Fancy Quality; Vacuum Packed) Dole 1

Manufacturer.—Hawaiian Pineapple Company, Ltd., San Francisco.

Description.—"Dole 1" or "grade 1": The appearance and flavor are the best of the three grades packed.

Sliced: Canned slices of pineapple, uniform in size and color, packed in concentrated pineapple juice syrup with added cane sugar (25 per cent sugar).

Crushed: Canned crushed pineapple prepared from the same pineapple material as the sliced but in crushed form; packed in concentrated pineapple juice syrup sweetened with added sucrose (25 per cent sugar).

Tidbits: Canned tidbits prepared from the same fruit as the sliced pineapple but cut into small uniform sections; packed in concentrated pineapple juice syrup sweetened with added sucrose (25 per cent sugar).

Manufacture.—The pineapples are picked at a definite stage of ripeness when the flavor is at its best. The crowns are cut off; the fruit is graded as to size and immediately shipped to the cannery near Honolulu, where it is distributed to special machines ("Ginaca" machines) of which there are three sizes, each cutting the pineapple to a different diameter. The machines automatically "size" the pineapples or cut out cylinders of a definite diameter from the fruit, extract the core and trim off the ends. (A certain amount of choice fruit material adheres to the skin after the cylinder is cut out; this is separated from the skin by the same machine. This material is used for "crushed pineapple." All parts of the pineapple not used in canning are used for the preparation of concentrated pineapple juice, which is neutralized, filtered and concentrated.

The concentrated juice is sweetened with sucrose and is used as a syrup to add to the canned products.)

On leaving the "Ginaca" machines, the pineapple "cylinders" are transferred to canning tables, where uniformed operators wearing rubber gloves inspect the fruit and do whatever trimming is necessary. The trimmed fruit cylinders are washed with a water spray and automatically sliced. The slices are delivered to a packing table, where gloved operators select the slices for the three grades of canned products (doles 1, 2 and 3) and fill the cans. The filled cans of sliced and tidbit pineapples are subjected to a "vacuum" treatment in an automatic machine, following which each can receives a certain quantity of syrup of the sweetened concentrated pineapple juice previously referred to. The use of pineapple juice syrup gives added pineapple flavor to the product. The cans are automatically closed in a "vacuum" closing machine. No solder is used to close the cans. (The crushed pineapple is not "vacuum" packed). The sealed cans are heat processed under steam pressure and immediately cooled thereafter to about 50 C. Processed cans are inspected for any imperfections and crated for shipment.

For making the crushed pineapple, the fruit material adhering to the skins is separated by machine, in which operation the fruit is shredded. The shredded material is spread on a wide belt for inspection and any undesirable parts are removed. Crushed pineapple is also obtained from slices which are irregular in shape and therefore unsuitable for the sliced product. The slices are crushed and shredded by machine. The crushed pineapple is cooked in nickel steam heated kettles equipped with agitators and recording thermometers. The cooked material is automatically canned, sealed and cooled.

Analysis (submitted by manufacturer).—

	per cent
Moisture	83.2
Ash	0.5
Fat (ether extract).....	0.1
Protein (N X 6.25).....	0.4
Reducing sugar as invert.....	6.1
Sucrose (copper reduction method).....	6.8
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference) ..	14.7
Titrate acidity as citric acid.....	0.8
pH	3.9

Calories.—0.6 per gram; 17 per ounce.

Vitamins.—Biologic assay shows the canned pineapple to be a good source of vitamins A, B and C, practically equivalent to the fresh fruit in A and B and but slightly inferior in C.

Claims of Manufacturer.—The special "vacuum" packing retains the natural pineapple flavor. The canned product is practically equivalent to the fresh fruit in nutritional values (vitamin C slightly reduced).

TIP TOP SANDWICH BREAD (SLICED)

BAUR'S AUNT HANNAH'S BREAD

BAUR'S AUNT HANNAH'S SANDWICH BREAD (SLICED)

WARD'S PERFECTION BREAD

WARD'S SOFT BUN BREAD

WARD'S MOTHER HUBBARD BREAD

Manufacturer.—The Ward Baking Company, New York City.

Description.—White bread made by the sponge dough method (method described in *THE JOURNAL*, March 5, 1932, p. 817); prepared from flour, water, condensed skim milk, sugar, shortening, salt, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Claims of Manufacturer.—Conform to the United States Department of Agriculture definition and standard for white bread.

ARBITRATOR PATENT FLOUR (BLEACHED)

Manufacturer.—Saxony Mills, St. Louis.

Description.—An "all purpose" soft winter wheat patent flour; bleached.

Manufacturer.—Selected soft red winter wheat is cleaned, tempered, scoured and milled by essentially the same procedures as described in *THE JOURNAL*, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen

trichloride (one-ninth ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour).

Claims of Manufacturer.—This flour is designed for general home baking.

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- Lesson 5. "Principles of Meat Cookery . . . Preparation of the Less-Tender Cuts."
- Lesson 6. "Preparation of the Less-Tender Cuts . . . Mechanical Methods."
- Lesson 7. "Soup."
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The six charts present diagrammatically relative calory, calcium, iron and copper, phosphorus, protein and vitamin values of certain common foods.

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Manufacturer.—Universal Mills, Fort Worth, Texas.

Description.—An "all purpose" short patent flour prepared from a blend of hard and soft winter wheats; bleached and "matured."

Manufacture.—Selected hard and soft winter wheats are cleaned, scoured, tempered and milled by essentially the same procedures as described in *THE JOURNAL*,

Chosen flour streams are blended, bleached with nitrogen trichloride (3 Gm. per barrel) and a mixture of calcium phosphate and benzoyl peroxide (1/3 ounce per barrel).

Claims of Manufacturer.—For home baking.

FISHER'S CRACKED WHEAT (Selected Hard Wheat)

Manufacturer.—The Fisher Flouring Mills Company, Seattle.

Description.—Coarsely granular cracked red spring Montana and Washington wheat from which a portion of the endosperm and bran have been removed to give uniform granulation.

Manufacture.—Selected red spring wheat is cleaned, scoured, washed, tempered, cracked between rolls, and passed through a series of purifiers and aspirators to remove light and finely divided material. The material of uniform granulation is heat treated to destroy any insect infestation and packed in bags.

Analysis (submitted by manufacturer).—

	per cent
Moisture	9.4
Ash	1.6
Fat (ether extraction method).....	1.6
Protein (N X 5.7).....	11.9
Crude fiber	2.5
Carbohydrates other than crude fiber (by difference) ..	73.0

Calories.—3.5 per gram; 99 per ounce.

Claims of Manufacturer.—Approaches whole wheat in composition.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - "Medic, Chicago"

Subscription price - - - - - Seven dollars per annum in advance

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SATURDAY, APRIL 8, 1933

RELAXATION OF RESTRICTIONS ON PRESCRIBING OF LIQUOR

In an editorial, July 17, 1920, THE JOURNAL made the following statement:

Our profession has always been regarded by the public as an honorable one. Its members are presumed, by the very nature of their calling, to be upright and dependable. . . . It is beside the question as to how many prescriptions for liquor any physician may need to write in a certain length of time. It is obvious—there is no denying the fact—that some physicians are grossly abusing their trust in this matter. . . . For the good name of our profession, it should be made known to the public in an emphatic manner that such disreputable practices, on the part of any physician, are not condoned.

While THE JOURNAL has constantly maintained the right of the physician to prescribe at any time anything which he considers necessary for the health of his patient, it has, at the same time, repeatedly urged physicians to respect the privilege conferred on them by the government in permitting them to prescribe alcoholic liquors even when the law of the land attempted to restrict the use of such beverages from the point of view of social interest.

Now the Celler-Copeland medicinal liquor bill has been passed by the Senate and the House of Representatives and was approved by President Roosevelt, March 31. The bill became effective immediately except for the provisions directing the discontinuance of the use of official prescription blanks. Thus comes to a successful conclusion the long battle waged by the American Medical Association to procure for qualified physicians the right to prescribe whatever they deem necessary and in any amount that may be shown to be necessary in the best interest of their patients.

In place of the former arbitrary limits on the quantities of alcoholic liquors that a physician might prescribe, on the alcoholic strength of the vinous liquor, and on the number of prescriptions that might be issued, the law now provides that "no more liquor shall be prescribed to any person than is necessary to supply his medicinal needs." Within the limits of sound professional practice, the judgment of the attending physician is supreme. The prohibition on the medicinal use of malt liquor

remains in effect. Under the recently enacted law regulating the sale of beer, nothing in the National Prohibition Act now applies to fermented malt and vinous liquors that contain not more than 3.2 per cent of alcohol by weight. Malt and vinous liquors of this type may be prescribed without federal restriction.

While there are now no federal limitations on the quantities of spirituous and vinous liquors that a physician may prescribe, except the limitations imposed by sound professional practice, the manner of prescribing is governed by new regulations. If the diversion of medicinal liquor to beverage purposes is to be prevented, unscrupulous physicians cannot be left at liberty to order in a single prescription all the liquor that any patient might need throughout the entire period of his illness and convalescence. Indeed, a patient might apply to several physicians, concealing from each the fact that he was under treatment by the others, and thus obtain an excessive quantity of liquor. This possibility has been anticipated by the new law. Any person who by misrepresentation obtains a greater quantity of liquor than is necessary for his medicinal needs is liable to fine and imprisonment. The abuses that might arise if physicians should customarily prescribe quantities of liquor sufficient to last through the weeks, months and years of chronic illness are apparent. Therefore the maximum quantity that may normally be prescribed at one time will be fixed, as well as the normal maximum frequency of prescribing. Moreover, special provision may be made for prescribing additional quantities in cases of actual necessity.

The Attorney General and the Secretary of the Treasury are authorized jointly to promulgate regulations to govern the details of prescribing. They are already consulting with representatives of the Association and with others in an effort to formulate fair, reasonable and effective regulations. In order to bridge the gap between the old and the new order, however, they have continued in force the limitations on prescribing that have heretofore been in effect. Notice of the promulgation of the new regulations will appear in THE JOURNAL, and official information will be available at the offices of supervisors of permits throughout the country.

On the discontinuance of the use of official prescription blanks, about January 1, physicians will be supplied free by the government with engraved stamps of a convenient size and design, suitable for affixing to a physician's ordinary prescription blanks. A physician who wishes to prescribe liquor will then be required to write his prescription on his ordinary prescription blank, in such form and detail as may be prescribed by regulations, and then, in order to validate his prescription, to affix and to cancel such a stamp. Until the date determined on for initiating the use of such stamps, physicians are to continue to use the present official forms with which they have been supplied.

While the new law provides that a physician shall not be called on to file in any government office any statement of the nature of the ailments from which his patients are suffering, physicians must continue to keep in their offices the book records now required, stating the nature of such ailments. These office records will assume an increased importance with the discontinuance of the filing of prescription stubs with supervisors of permits. These book records continue to be open to inspection by officers charged with enforcing federal prohibition laws.

The adoption of this new law places on physicians a greater responsibility than has been theirs heretofore. THE JOURNAL has maintained that the honor of the profession warrants the granting of such a responsibility. The physicians of this country must demonstrate that this confidence has not been misplaced. The fact that the prescription of alcoholic liquors is still not permitted in several states, the fact that numerous physicians in states in which prescribing is permitted have refused to take out the necessary license or to avail themselves of the privilege, the fact that many physicians find the possession of this privilege a serious annoyance in their relationships to both patients and friends, are indications that the right to prescribe alcohol has never been an unmixed blessing. We believe that the physicians of this country can so administer the new situation in which they find themselves as to continue to merit the high honor in which both the public and the government have held them.

AIR CONDITIONS AND HEALTH

The final report of the New York Commission on Ventilation,¹ which began its work in 1913, concludes that desirable conditions may be obtained for schools by plenum ventilation, local unit ventilation or window-gravity ventilation but recommends further investigations into the physiologic effects of radiation and convection of heat, of vertical variations in temperature, and of electrical and other properties of the atmosphere. Following this report, the American Institute of Architects² passed a resolution for revision or repeal of present codes or regulations until such time as hygienists and engineers may agree. In June, 1932, Yaglou and his co-workers³ sought to clarify the confusion that has arisen regarding the interpretation of certain standards advocated by them for a number of years; viz., the "effective temperature index" and the use of "comfort charts." Simultaneously the American Society of Heating and Ventilating Engineers⁴ adopted

a greatly simplified set of standards and definitions. In the meantime certain well known English investigators⁵ announced new discoveries in the field of radiant energy and methods for detecting such factors, which have changed prevailing ideas considerably. Finally, at its Washington meeting in October, 1932, the Committee on Research and Standards of the American Public Health Association appointed a broadly representative committee "to establish a suitable set of air standards for places of various types of occupancy."

Possibly this problem is simpler than it has been made to appear, and what is comfortable is ordinarily healthful. Hayhurst⁶ studied the relations between air conditions and comfort, health and efficiency both in the home and in the school. In the case of the home, after about five years of preliminary observations to determine methods of procedure, he reported his conclusions for the subsequent ten-year period 1923-1932. These observations were made in Columbus, Ohio, the family consisting of himself, his wife, a maid and five children, the oldest of the children being 9 years of age when the ten-year observations began, while the youngest was born during the second year of the period. The three older children were by a former marriage. Thus a critical health period in child life was covered.

The methods selected for heating and otherwise air conditioning the home were all simple and inexpensive, with stress on insulation, radiation, general plus local heating, and the recirculation of heated air. The members of the family dressed lightly and followed quite closely, but without unnatural effort, a "rational" diet; i. e., one rich in vitamins and minerals. During the period, the children experienced the usual diseases of childhood but invariably without complications or sequelae, while all the members of the family followed the usual pursuits and recreations of life with attendant health risks. Sickness disability experiences were grouped as (1) nondisabling respiratory, (2) disabling respiratory, (3) other nondisabling and (4) other disabling. The yearly average number of both groups of respiratory disorders (combined) ranged from 0.9 for the oldest child to 2.1 for the experimenter himself, with an average for all members of the mixed family of 1.5. Complications and sequelae were also nonexistent for all other (i. e., nonrespiratory) disabilities. The author concludes that the common sense procedures followed, particularly in view of many supporting observations in related fields, were conducive to the better-than-average-health record.

In a study of air conditions in the schoolroom, where crowded assemblage and "absent" supervision commonly obtain, more stress, according to the author, should be placed on insulation, the control of heat, ventilation, recirculation, filtering and warm season

1. New York Commission on Ventilation: School Ventilation—Principles and Practices, Bureau of Publications, Teachers College, Columbia University, 1931, p. 66.

2. American Institute of Architects: Opposition to Ventilation Codes, the Octagon 4: 13 (March) 1932.

3. Yaglou, C. P., and others: How to Use the Effective Temperature Index and Comfort Charts, Heating, Piping and Air Conditioning 4: 433 (June) 1932.

4. Driscoll, W. H., and others: Report of Committee on Ventilation Standards, Am. Soc. Heat. & Vent. Engin. Guide 11: 327, 1933.

5. Vernon, H. M.: Measurement of Radiant Heat in Relation to Human Comfort, J. Indust. Hyg. 14: 95 (March) 1932. Dufton, A. F.: The Equivalent Temperature of a Room and Its Measurement, Brit. Dept. Sc. & Ind. Research, Bldg. Research, Tech. Paper 13, May, 1932.

6. Hayhurst, E. R.: Air Conditioning with Relation to Comfort, Health and Efficiency, J. Indust. Hyg. 15: 98 (March) 1933.

adjustments, but humidification, chemical composition, and the exact quantity of fresh air may be ignored. Manual or mechanical control may be equally satisfactory, but the latter should not be present without the former. Mechanical control is necessary for warm weather and sudden warm spells at any time. Any system used should permit the windows to be opened when the weather permits, at least until our knowledge respecting the relations between fresh air and health are more perfectly understood. "The chief complaint in uncomfortable rooms is not ventilation but overheating, to which stuffiness and odors bear a direct relation." Where air is forcibly introduced, as under fan pressure, no special exit vents are necessary, since the "vitiated" air escapes readily through structural apertures.

The logical conclusion, especially from home studies, is that temperatures of from 68 to 70 F. (20 to 21.1 C.), radiant forms of heating, and differences in the temperatures of various rooms for physiologic stimulation effects are desirable for health, but that some other factor, perhaps the state of nutritional resistance and not "bad air," determines respiratory disorders and their complications. Air conditions in the schoolroom may initiate and help to spread colds, but their duration after exposure suggests nutritional inadequacy in the victims.

Current Comment

WOMEN WHO ENAMEL STOVES

The enameling of stoves is a comparatively new industry in which there is a health hazard due to lead used in the enamel. Since many of the workers in stove enameling are women, the Women's Bureau of the Department of Labor made a study of this industry. Some fifty enameling plants were visited and about seven hundred women were interviewed; three fourths of these women were employed in spraying the enamel and in brushing. The sprayers stand in a booth enclosed on three sides and work an air pressure gun. Exhausts were provided in the booths, but apparently they did not work satisfactorily. The face and clothing of the majority of the sprayers were covered with enamel dust. The work of the women who brush off excess enamel from the stoves was extremely dusty. In some plants the tables on which the brushing was done were equipped with exhausts to carry off the dust, but a more general use of such tables was needed. Symptoms of lead poisoning were reported by about one third of the women interviewed. The most frequent reason for absence from work was illness that suggested lead poisoning. One hundred and fifty-seven women had been married at least a year, and 72.6 per cent of them had not had children. Women suffering from lead poisoning are liable to be sterile or to miscarry. Among 164 maternal histories reported, 30 per cent of the women had been pregnant during or subsequent to the time of their employment at stove enameling and about one in seven had had

miscarriages. Workers in lead enamel should be protected from exposure to lead as much as possible. Their health should be guarded by the employment of a physician to examine them at regular intervals. They should change into clean clothing on leaving their work. Food should not be taken into the workroom. The dust should be reduced to a minimum. The study by the Women's Bureau showed that effective precautionary measures against lead poisoning were not being taken in the stove enameling industry. Not one plant furnished all the conveniences necessary for adequate washing facilities. Thirteen plants were without soap, individual towels, hot water or nail brushes, and the provisions for serving lunch were insufficient to protect the workers from lead while eating. A few factories provided for physical examinations, but only four examined the workers when they were employed. Some of the workers in stove enameling wore respirators, but they were doubtfully effective except for emergency use. If the stove enameling industry is to be free from these dangers, it will have to improve conditions in its plants that are known to be hazardous to health or else remove the greatest health hazard by using leadless enamel.

PRIESTLEY AND OXYGEN

The scientific world recently celebrated the two hundredth anniversary of the birth of Joseph Priestley, whose name will forever remain associated with the discovery of oxygen. Priestley was one of the pioneers in a new era of chemistry, when the recognition of some of the familiar gaseous elements and compounds came in rapid succession. These included the "fixed air" of Black, now designated carbon dioxide; the "inflammable air" of Cavendish, familiar today as the gas hydrogen; nitrogen, studied by Rutherford; and nitric oxide by Priestley. Then followed Priestley's most important discovery, Aug. 1, 1774, of what he termed, under the spell of the still current theories, "dephlogisticated air." He decomposed by heat the powder obtained by calcining mercury, and collected and examined the gas given off. In a thrilling story he related how candles and glowing coals burned in this gas with extraordinary vigor, and mice lived in it under a bell jar even longer than in air. Reasoning on the basis of the old phlogiston hypothesis, Priestley selected the name "dephlogisticated air" because the remarkable gas was derived from a burnt, i. e., dephlogisticated, metal and yet was colorless and odorless like ordinary air. Soon thereafter the Swedish chemist Scheele independently discovered the same gas and named it "empyrean air." It remained for the brilliant Lavoisier, "father of the science of nutrition," to appreciate the true facts and coin the word "oxygen," now in use. Numerous other chemical discoveries of importance are attributable to Priestley, sufficient, in the words of a recent commentator, to garner several Nobel prizes. This writer has remarked that Priestley was a paradox, consider him any way that you wish. "An ardent clergyman, he became famous as a scientist; spiritual matters were of first importance for him, yet his physical discoveries alone brought him fame and loom large

in the tradition of physics and chemistry. The first to isolate oxygen, he labored all his life in opposition to the French theory of burning as oxidation. His own discovery overthrew his pet scientific notion, the phlogiston theory of combustion." In these days, when the specter of intolerance and prejudice is cropping out anew in parts of the world designated as "civilized," it may be worth recalling that Joseph Priestley fled from his homeland after composing political and religious pamphlets. He journeyed to France and finally to the United States, where he settled in 1794 at Northumberland, Pa., and remained until his death in 1804. His American home has been retained as a shrine to which hundreds of persons make pilgrimages. Sir Michael Foster maintained that Lavoisier really discovered oxygen—that Priestley and Scheele had merely isolated it. Lavoisier helped to demolish the phlogiston theory and demonstrated the true relationships between combustion and the animal respiratory exchange. The death of Lavoisier by the guillotine in 1794 as the victim of misdirected political radicalism is another "foul blot on civilization."

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., central standard time, over Station WBBM (770 kilocycles, or 389.4 meters). The subjects for the week are as follows:

- April 11. Economic Loss Due to Mental Disease.
- April 13. Telescopic Spectacles.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM. The subject for the week is as follows:

- April 15. Sickness and Character.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Twenty-Ninth Annual Meeting, held in Chicago, Feb. 13 and 14, 1933

(Continued from page 1043)

DR. MERRITTE W. IRELAND, Washington, D. C., in the Chair
JOINT SESSION OF THE COUNCIL ON MEDICAL
EDUCATION AND HOSPITALS AND THE
FEDERATION OF STATE MEDICAL
BOARDS OF THE UNITED
STATES

RECOGNITION OF SPECIALISTS

The Function of Special Boards of Examiners

DR. SANFORD R. GIFFORD, Chicago: The methods of these special boards are similar and are modeled on those of the American Board for Ophthalmic Examinations, which was founded in 1916. This board has given certificates to 933 candidates, a number almost equal to the number of men limiting their practice to ophthalmology. The Board of Otolaryngology, founded in 1924, has certified 1,989 otolaryngologists. This is even more than the number limiting their work to otolaryngology, 1,392, and includes many who practice ophthalmology as well. The combined group practicing either specialty or both includes 6,397 physicians, of whom 46 per cent have been certified by one of the two boards.

The American Board for Gynecology and Obstetrics, founded in 1930, has certified 401 applicants to date, according to a

recent letter from Dr. Titus, the secretary. While this is only 8 per cent of 4,695 men listed as limiting their work to obstetrics or obstetrics and gynecology, it is as much as would be expected in three years. A board for dermatology and syphilology, of which Dr. Arthur Stillians is chairman, will hold its first examination in 1933.

Although these are the only boards already established, committees of the special societies for pediatrics, neuropsychiatry, orthopedic surgery and radiology have been organized with a similar purpose in mind and it is to be hoped that within a few years all of these specialties will have representative boards. All the boards have chosen to make the application for their certificates purely voluntary. On account of the complete independence of state licensing boards with various standards, it has not seemed practical to bring about any legal recognition of the special boards' certificates as requirements for special practice.

In Denmark, a three to six years course of preparation is determined by a committee of the national medical society, and candidates must satisfy a subcommittee in their specialty. In Austria, specialists must be members of the society of specialists, which prescribes a four to five years course of preparation for admission, which is similar to that required in Germany. Fourteen specialties, including surgery and internal medicine, are covered by these regulations. In Canada, at least one province, Alberta, has set up legal minimum standards for specialists, leaving in the hands of the University of Alberta the registration of applicants who have satisfied these.

In this country, attempts to increase the number of applicants to the boards have chiefly taken the direction of making their certificates prerequisite to membership in the special societies. The average layman, who should be vitally interested in knowing whether the specialist he selects is or is not competent, has never heard of the special boards or special societies and, if he sees a board certificate on his doctor's office wall, gives it no more importance than the diploma of a six weeks postgraduate course in one of our schools which traffic chiefly in diplomas. When he hears that a surgeon has just returned from studies in Vienna, which is usually reported in the local papers, he is duly impressed, even if the period of study is only six weeks, while the fact that another surgeon has been examined and passed by an American board, if known at all, fails to affect his opinion materially. It would seem that more publicity could well be given to the special board examinations. Physicians know less than they should about legitimate publicity and are inclined to be afraid of it. But surely there are ethical means by which such examinations with something of what they mean could be made more widely known. Notices in the papers of cities where board examinations are held should not be difficult to arrange. It would certainly not seem too much that certification should be absolutely required of heads of special departments in approved hospitals. It would be better, and I believe is not entirely unpractical, if within two or three years all the regular attending men in such hospitals should be required to do the same. Practically the same effect would be obtained if staff members were required to be members of one of the special national societies which require a board certificate for membership. This would make possible the retention of some older men who were members of such societies before the boards existed and could be made to apply to specialties in which special boards do not yet exist.

The same possibility exists in the case of the staff of medical schools and the hospitals controlled by them.

The Function of the State

DR. WALTER L. BIERRING, Des Moines, Iowa: The training for the specialties is distinctly an educational problem, and the qualification should be determined on a uniform national basis rather than by each separate state. It would seem most unpractical for each state to establish a board of examiners in the specialties. While some of the personnel of various boards may be fully capable, it is doubtful whether they could rise to the heights and conduct such an examination properly. The difficulty of maintaining uniform standards must be equally obvious.

Any plan of national scope that is proposed by this conference must place the responsibility primarily on the educational forces. The test of efficiency and qualifications can be

properly based on a satisfying examination set by national leaders in each particular specialty. At present there are in operation separate boards of examiners in the four specialties of ophthalmology, otolaryngology, obstetrics and gynecology, and dermatology, the membership of each board being selected by the national associations in the specialties concerned. There is every reason to expect that within a short time similar examining boards will be established in the remaining nine or ten recognized forms of specialized practice. It will also be evident that the tendency to duplication and lack of uniformity in examination procedure will increase as each additional board is organized.

Any plan of national qualification should consider and incorporate as far as possible the following three agencies:

1. The national examining boards in the different specialties. Because of the nature of their organization, these boards are specially fitted to judge and determine properly the training and qualifications necessary for recognition as experts in each of the special fields of practice.

2. The National Board of Medical Examiners, because of the facilities it offers in established subsidiary boards of examiners for its part III (clinical) examination in twenty-two medical centers in this country. A similar board is now being established in the Canal Zone. These are fully equipped and prepared to conduct comprehensive practical examinations in the fundamental and clinical medical sciences.

3. The Council on Medical Education and Hospitals of the American Medical Association, which, acting as the representative of the general medical profession, can exercise the function of a coordinating, unifying and to a large extent supervising agency of the procedure of qualifying specialists in this country. Specialism is but an advanced form of medical training, and its national supervision is logically within the province of this council. It can exert the same function with reference to postgraduate instruction that it does to medical schools. It is also best fitted to maintain a registry for the entire country.

Such a procedure will greatly simplify the function of the state in the regulation of specialists. It will obviate the necessity of special legislation and the establishing of state boards of examiners in the specialties.

The applicant desiring to limit his practice to a specialty, after fulfilling the requirements for a general license, will submit to the department of state government concerned with the practice of medicine, the certification of special qualifications in accordance with regulations to be generally adopted. If these are satisfactory, the specialist can be listed as such in a state register maintained for that purpose. A registry of this nature would establish a particular identification for specialists as well as being informative and a distinct protection for the public.

The adoption of a plan as outlined will be an assurance of joint leadership in a national program that will embody the educational ideals and methods of the university and the highest type of specialized practice.

The Function of the Medical School

DR. IRVING S. CUTTER, Chicago: The change from a mediocre to a high standard in undergraduate medical training in America has been of such recent origin that one can understand the rather tardy development of opportunities for graduate training in all fields of medicine. As early as 1910 a few faculties in cooperation with controlled or affiliated hospitals had worked out a tentative plan for the graduate training of certain superior students. Although there were but few opportunities of this character available, there were but few applicants. While an accurate estimate cannot be made because of the varying character of the opportunities offered, it is safe to say that there are now more than 300 fellowships under the control of faculties in American medical schools, designed to train the student thoroughly in the basic sciences and to provide special training in a clinical field. The programs vary from three to five years and in some instances are longer. This figure is exclusive of the fellowships offered by the Mayo Foundation. Despite the apparently generous number of fellowships, recent data would indicate that there are two or three times as many well trained applicants for the intern-laboratory-residency program as there are places available. Probably the general practitioner will never cease to look forward to the time when he can devote himself to some special field for which he has peculiar qualifications and inclinations. On the other hand,

if present tendencies continue unabated, each specialty will soon reach a saturation point. This may result in the development of a type of general practitioner who will be far better trained than is the graduate of today. It is obvious that with better trained general practitioners the calls on the highly trained specialists will become less frequent. This situation is noticeable even today, largely because of better undergraduate and hospital training of recent graduates.

Since specialism is undoubtedly a natural outgrowth of an earnest desire on the part of the physician to render better and more efficient service, it must not be discouraged in those who feel justified in so preparing themselves. Unfortunately, it is a relatively simple matter for a duly licensed practitioner of medicine to announce himself as qualified in some special field. At the present time the American Medical Directory indicates the special field chosen by each physician, but there is no investigation of the qualifications substantiating the designation. American medicine must establish some agency or agencies that will inform the public as to the qualifications of physicians practicing in special fields.

Special societies have in a sense constituted a group that have generally represented a very high standard of excellence in certain fields of medicine. Of the membership of these groups the public has had little information and such societies have served only in slight degree as a source of information in the layman's selection of a competent specialist. On the other hand, membership in special societies has been a source of much information to the profession itself and has no doubt contributed to the choice of consultants in difficult cases.

From published reports and the innumerable hypercritical articles in the lay press directed toward medical practice, it might appear that there is a lack of understanding on the part of the public regarding the beneficent rôle of medicine. Such information, however, emanating largely from professional sociologists and disoriented economists, does not correctly reflect the attitude of the public. The public has not lost confidence in medicine and at no time have educational factors setting forth the true rôle of medicine been so numerous and efficient as they are today. The reliance of the individual on his personal physician is greater today than ever before. Economic factors that rule in the practice of medicine must be studied by physicians who are able to gather accurate data from the actual field of practice. The analysis must mirror medical practice as it is. Conclusions from such an analysis would probably not point to the introduction into the medical curriculum of courses in department store salesmanship.

Regardless of the chief rôle of the organized medical school, namely, undergraduate instruction, every school, within a reasonable time, will be engaged to some extent in graduate training. It would appear that the development of suitable residencies of from one to three years, preferably in teaching hospitals, would offer the best opportunities for graduate training, and it would seem reasonable that residencies under university administration would typify the best in graduate education and in and of themselves constitute the graduate schools of the future.

The Relation of the Council on Medical Education and Hospitals of the American Medical Association to the Special Practice of Medicine

DR. RAY LYMAN WILBUR, Washington, D. C.: Specialism was an inevitable accompaniment of the advance of modern medicine. On the whole, it has had most wholesome results, both in the care of the sick and in the extension of knowledge.

In the United States it has developed practically free from control. The abuses that were current in the uncontrolled medical education of three or four decades ago are now showing themselves in nearly all the specialties. It was necessary in the control of medical education to obliterate or amalgamate existing teaching institutions, to develop standards for laboratories, hospitals and medical schools, to bring about state legislation controlling the practice of medicine and surgery, and to endeavor to influence through medical societies, social organizations and law the inadequacies of free and untrammelled medical training. In this process of changing and maturing medicine, the American Medical Association, through the Council on Medical Education and Hospitals, has had a dominating influence. This influence has been brought about in spite of

an absence of power of control, through carefully devised programs, frequent inspections and the use of publicity in presenting the facts to the medical and lay public, largely through the publications of the American Medical Association. Other forces have joined in, but the constant and steady influence of the Council has been of fundamental importance.

It has been frequent in recent years for self-anointed specialists to present themselves to the public without adequate training and without passing through a well defined period of preparation. Each man was a law unto himself. Along with this has gone the development of great skill on the part of many individuals in the specialties. Time has shown a sufficient number of difficulties, if not failures, among specialists, to warrant the handling of this question in a way that will not only protect the best interests of the public but also bring about growth in the training and skill of those who select special fields for their medical work. Specialism is here to stay and to grow.

In approaching the question from the standpoint of the American Medical Association, it seems that we should realize that we cannot wisely disturb specialists who are now established in their profession, nor insist on a specific training for them. Whatever we may wish to do in the way of suggestions for training can apply only to new men. It is, though, well within the function of the Council on Medical Education and Hospitals to set up minimum standards of education for all who are in the future to be recognized as specialists and also to require certain standards for those whose names are to be published in any list of the Association. It might be said that this can better be done by certain of the special societies, but it does not seem wise to allow specialism to be controlled by self-controlled organizations often having in their membership certain individuals who make it their function to "freeze out," for personal reasons, men who may be equally qualified. Also, it is not wise to wait until the police power exercised through licensing can function so far as the various state boards of licensure are concerned.

Granted that there is an evolution going on in specialties of medicine and that we are in a transition period offering unusual difficulties of control, it seems nevertheless that now is the time to attack the problem and that, so far as the Council is concerned, it is within the power of the Council, and technically possible, to: (1) provide certain minimum standards of education and training for specialists and to list in the American Medical Association Directory, or in some special directory, those whose achievements equal these standards; (2) provide lists of schools or institutions approved for the training of specialists; (3) list hospitals offering residencies or other positions suitable for the training of specialists; (4) come to a decision as to the way in which those who are already in special fields shall be designated; (5) work out, in conjunction with the Association of American Medical Colleges, the American Hospital Association and the National Board of Examiners and the national societies, constructive plans for dealing with those who plan to enter special fields.

It would be possible also to localize lists of specialists so that they could become available in the different states, cities and counties. While there are no doubt some difficulties associated with this program, the record of the Council indicates that it is in the best position to speak with the voice of the entire medical profession. Its continuity of policy and personnel, its freedom from professional jealousies and political control, permit it to make impartial judgments. It has available unequalled facilities and established machinery for carrying on its work. The biographic files of the Association contain the most complete information anywhere in the country regarding the membership of the medical profession.

The Council is in a position to verify the credentials and the record of special training of candidates. Its inspectors are constantly in the field and in a position to make personal investigations in a community. The staff as organized has already gained much experience through the preparation of the existing lists of physicians specializing in radiology and pathology. Through THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and the American Medical Directory it is possible to give these lists a widespread distribution of almost universal availability. The Directory is an accepted source of information here and abroad. It is possible for the Association to provide the funds to carry this out effectively and continuously if the policy is adopted by the House of Delegates.

The Council is already engaged in the preparation of lists of qualified specialists in two of the fields of medicine, so that it is much more economical for it to extend its activities than for some new agency to be created. The Council can coordinate all the existing information and all the available lists of specialists. I feel that there is an opportunity to control the important specialties, which is now equal in importance to the work done in the fields of ordinary medical school direction. The Council can proceed without the action of the legislatures and free from outside interference. Its work can be carried on within the profession and can be united with all other constructive forces. We know that the method is effective for it has worked before. Should it be desired, the Council on Medical Education and Hospitals stands ready to carry on work in this new field to the best of its ability.

DISCUSSION

DR. LOUIS B. WILSON, Rochester, Minn.: Despite the popular publications by inadequately informed economists which have tended to create distrust of the medical profession in the minds of lay readers, there are few laymen who in the event of complicated illness in their own families will attempt unaided to select a specialist. They rightly, for the most part, fall back on the advice of their family physician. The chief exception to this practice is the selection directly by the patient not of one specialist but of a group of specialists, some one or more of whom, he has confidence, will be able to give him adequate professional service. It has happened, however, that the intelligent patient has come to accept the recommendations of his family physician less blindly. When the young family physician attempts to answer the inquiries of his intelligent patient, and much more so when he attempts to give a reason to himself for his selection of a specialist for his patient, he is often in a quandary. We must not forget that approximately 4,000 young men and women begin the practice of medicine each year. Most of these have inadequate data on which to make a selection, yet they are the ones who most need consultants and whom it is to the greatest interest of the public and of the profession that they start right.

The essential qualifications which the family physician seeks in a specialist are (a) competence, (b) honesty and (c) good hospital connections. At present the family physician must determine the specialist's competence by the latter's general local reputation and by such information as is contained in the directory of the American Medical Association. The general opinion held by his associates of an experienced specialist is trustworthy, but, unfortunately, it is often difficult for the young family physician to obtain this general opinion even in a large community. It is much more difficult for the family physician in a small community to obtain reliable opinions concerning a specialist in a distant large community. The information in the directory of the American Medical Association gives the specialist's age, his year and school of graduation, the date and place of his licensure, what specialty he has said he is confining his practice to, and his membership in specialty societies and in the American Medical Association. It gives no record of his hospital training for general practice or his special training for his specialty as a university graduate, as a hospital resident, or as an associate with another specialist. Reliable information concerning the honesty and professional integrity of specialists can usually be obtained from the secretary of the county medical society. Information concerning the specialist's hospital connections can be obtained only through a study of the hospital reports of the several hospitals in the city in which he practices, and these are sometimes unreliable. It is desirable that the referring physician should have immediately available the following information concerning specialists in their own and in distant communities: Age, year and school of graduation, year and state of licensure for general practice, place and character, if special, of hospital internship and residency, place and length of general practice, if any, length and character of training for specialty practice (school, hospital or assistantship), date and character of his official recognition as a specialist, membership in limited specialists' societies, and hospital appointments. I believe with Dr. Wilbur that the American Medical Association is the only organization which can bring such information accurately, economically and authoritatively to the medical profession. The American Medical Association is strategically and finan-

cially better able to collect and publish economically such a combined list of all specialists than could possibly be done by the several specialty boards themselves. There is just one possible modification of that. It is possible that the American College of Surgeons' list might be a parallel registry, and the American Medical Association could omit that. That is open for discussion, however.

Now, except in the case of the specialty group represented by Dr. Gifford and of the groups of otolaryngology and rhinology and of obstetrics and gynecology, the American Medical Association would find it impossible at present to obtain the information which I have mentioned concerning the recognized medical and surgical specialists. The American Medical Association is not an examining body and is not properly organized to become an examining body or a qualifying body. Where shall it turn for such information? From their experience and our confidence in their results, it would seem that the most intelligent procedure would be for each specialty to set up its own qualifying board. It seems to me that there is no question that each specialty can best determine authoritatively what individuals are competent to practice that specialty. I think we will agree that it is better that each should be a national qualifying board rather than a state or a county qualifying board. It remains only for the several national organizations in each of the specialties to get together and set up such a qualifying board. So far as competence is concerned, I believe the philosophy of the New Jersey Society in making the county society the qualifying body for the ethics of the specialists is a very wise move. The lists of qualified specialists approved by such boards, if accepted by the Council on Medical Education and Hospitals, should form the basis for the information as to competence to be published by the American Medical Association and distributed in as economical a manner as possible to the physicians of the United States. It should not be forgotten that just now the general practitioner in the small town has not money enough to buy the necessary journals and monographs that he thinks he should have for his profession. Do not let us saddle him with the purchase of a qualifying list from each of the several specialties. Let us, by all means, have the American Medical Association make a single list, which should be put out to him at the least possible cost.

DR. DEAN LEWIS, Baltimore: I do not think there is any doubt that specialists ought to have some way in which they can be recognized. No one should declare himself a specialist because he is inclined to do so. It also seems to me that the machinery is rather complicated. I agree with Dr. Wilson that many of these boards should not be examining boards; but they should be qualifying boards, because I think if there is anything we want to get away from in this country, it is repeated examinations. There is one thing about a residency that has to be taken into consideration. As far as surgery is concerned, I doubt whether enough medical schools in this country could provide the number of surgeons that might be required. Dr. Cutter spoke of Dr. Halsted's system in Baltimore at Johns Hopkins Hospital, which is really a transplanted German system. I think it has been very profitable. But we can take one resident in the Hopkins system each year, and it is a long system. It is seven years' service. During those seven years a man has a chance to engage in almost all types of surgery, but that is one man in seven years. The man who applies for that residency usually has to have some financial aid or be the son of a rich parent, because it takes seven years with very little money to go through a residency, so that may throw out a boy who might be a great surgeon, because the imponderables make the specialists. I think that any man who comes back after general practice and wishes to go into a specialty ought to be made a member of a staff. That ought to be the resident staff which runs that hospital.

There is another thing: A man goes into a town of 1,500. He is called on to operate for hernia. He may have to do an operation for appendicitis or strangulated hernia, or other emergency surgery. What requirement is to be expected of him? The same requirement cannot be made of that man who does emergency surgery in a small community that is made of a man in a large center, because that would immediately throw out from that community the man who is

probably best qualified to do the emergency surgery. There must be different requirements. That is part of the machinery which I think is going to be very difficult to handle. One of the main things about this specialty program is informing the public. I think probably the best means of doing that is through the American Medical Association, through the Directory. The Association has the equipment. It can use special societies. As far as informing the public is concerned, I think this is the best method, through qualifying boards without examining boards. Whether this is ever going to stop the unethical part of practice, I do not know. I never expect to see fee splitting and unethical things in practice rooted out until the highest type of medical profession develops. That is a moral thing. A man ought to know it; if he does not know it I often think he cannot be educated. Sometimes I get a little discouraged about this because a patient picks out a doctor for a lot of different reasons. Whatever qualifications the doctor may have, if he likes the doctor he is going to employ him.

DR. J. STEWART RODMAN, Philadelphia: I take it that most of this audience is conversant with the National Board's point of view so far as the qualifications of specialists are concerned. Dr. Wilson sounded the keynote, I think, of the National Board's position in this matter. The National Board all these years has been concerned primarily in undergraduate education. When it was suggested to the National Board a few years ago that because of its existing examining machinery it might be of use in qualifying specialists, the National Board thought perhaps it saw a duty and would be glad to do it if it was the wish of the specialists. The National Board feels that the ones to qualify specialists are the specialists themselves. I think that word "qualifying" is much better than "examining." So for once perhaps the National Board can get from under this onus of examining and have no idea whatever of trying to do anything else but leave it with the specialty boards, where it belongs. Perhaps the National Board can be of some use in electing to its membership, as Dr. Wilson has already said will be done, if the specialists desire, a representative from each of the specialties. We want to get away from standardization. We do not care how high they go or how excellently qualified they become in the specialty, but we are very much concerned with what the minimum is. We hope before this meeting is over to arrange a date just prior to the meeting of the American Medical Association when representatives of the National Board and representatives of the special boards and of the specialties who are interested in establishing special qualifying boards can be called together. Through the interest that has already been expressed in perhaps some sort of national cooperation of this kind, it is hoped that some national achievement will come of this, and that one in the future, as he comes to be known as a specialist, may bear some sort of a national stamp.

DR. WILLIAM A. PEARSON, Philadelphia: Medical specialization was well organized in the reign of the Egyptian king Menes, who was supposed to have had a rather extensive knowledge of the action of drugs. It is recorded that the human body was divided into squares, and that each medical specialist was permitted to concern himself only with the organs within a certain square. Specialization has been extended even to the present day, in my opinion at least, further than is necessary, because it is well established in the reports that have come into the hands of all of us that 90 per cent of all the patients who enter the offices of physicians can be effectively treated by the modern, well prepared general practitioner of medicine. I am willing to admit that the specialist deserves more frequent opportunity to advise the general practitioner, and his services should be called on. However, the specialist has developed, perhaps, to an extent not warranted by the demands, legitimate demands. I am confident that we must take into consideration the comparatively limited field for legitimate specialization.

DR. WALTER L. BIERRING, Des Moines, Iowa: I wish to present the following motion:

Resolved, That it is the sense of this congress that the Council on Medical Education and Hospitals of the American Medical Association be asked to carry forward its plan in developing control of the specialties.

DR. LOUIS B. WILSON, Rochester, Minn.: May I offer an amendment to that motion, that the Council be asked to carry

forward its plan, first, by calling a conference of representatives of the groups concerned.

DR. AUSTIN A. HAYDEN, Chicago: I second the amendment.

DR. CHARLES E. HUMISTON, Chicago: It would seem to me that the details of the method of procedure are rather premature. The Council would hardly be competent to deal with it if it were to close its eyes to every avenue of information. I have no reason to think that the Council would not do that. But to name all the interested parties and try to get them all together and get them all to agree would be an uphill grade.

The chairman put the motion and it was carried.

DR. SANFORD R. GIFFORD, Chicago: I did not say as much about the boards, perhaps, as I should have said because I thought that most of you had heard Dr. Wilder's paper last year explaining what the American Board for Ophthalmic Examinations is. This board and the other boards, though, are qualifying boards as well as examining boards. It would be desirable that these boards be recognized in some way legally, but the complications of the different state boards make it improbable that that will be effected soon. These other means have seemed to help a little bit and perhaps are all that can be expected in the near future.

DR. WILLIAM P. WHERRY, Omaha: The symposium this afternoon takes me back seven years to the time when the otolaryngologic board was first contemplated. At that time we constructed several hypothetical premises from which we intended to function. Experience, however, has quite completely changed our concepts. We now realize full well that we are not entirely a qualifying board, that we are not an examining board, but we are a board to determine "Is this candidate before us a safe man?" We keep in mind the ultimate object, the patient. "Is he a safe man?" To me that is the keynote of the special board's interpretation of the candidate. That the special boards will enter into graduate instruction, there is no question. It has been appalling to the otolaryngologic board to realize the carelessness with which graduate instruction is carried on. There has been very little supervision. We have realized that in the final analysis a school will be rated by its output, by the graduates. Not only that, we believe that a school will be rated not by the seeming preparation that it gives to this candidate but by the theme, the incentive implanted in his mind during that formative period. We have examined close to 2,000 candidates. We run a careful credential checkup on them. We evaluate their preparation into A, B, C and D grades. We expect the man who has been out some five, six, seven, eight or ten years with an A grade preparation to carry through with that preparation and pass his examination in an A fashion. It is interesting to see the incentive implanted in this individual's mind. We intend to publish soon an analysis of the records to show that it is not always the fellow with the preparation, it is the fellow who applies himself after that preparation that creates a safe man. I sometimes wonder whether we do not come back to the fundamentals of the undergraduate. It is the theme that is implanted in them. I, representing the Otolaryngological Board, am heartily in sympathy with Dr. Wilson. He has met with us. I should like to see a liaison, a coordinating body, under the auspices of the National Board of Medical Examiners through whom would come the determination and the follow up of policies in which all the boards are concerned, yet leaving the special board autonomic in its own control, because I do not believe that a surgeon can tell an otolaryngologist his delineations any more than an otolaryngologist can outline a surgeon's delineations.

DR. AUSTIN A. HAYDEN, Chicago: I should like to address my remarks to what was said by Dr. Pearson to the effect that 90 per cent of all illnesses can be taken care of adequately by the general practitioner. That is an observation that has been heard many times, and it is a statistical observation rather than a real one. Hospital statistics readily substantiate that statement, but as one looks at the actual patient, the man who comes in with a high tension in his eye or an abdominal pain, or as one looks over the statistics of those cases, it is quite simple to figure out that only 10 per cent needed really expert service; but as one looks at the disease itself, it is hard to say which falls into the 10 per cent and which into the 90 per cent. I have heard this remark made many times by leaders in medical education, and still I invariably

have found that these men, when they have an earache, consult the best otologist they can find. The question of designation of specialists came up before the Chicago Medical Society within the last month. The radiologists asked the council of the society to make a ruling on whether or not the printing of their names in the advertising book of the Chicago Telephone Company, under a specially designated group, known as radiologists with the title of doctor of medicine, would or would not be considered unethical. The society decided that the printing of such a column in the Red Book of the Telephone Company of Chicago would not be considered unethical. These men said that not many of their people came to them through referring physicians and they felt that the general public was entitled to know who were the qualified men in Chicago who were operating x-ray laboratories. That was the answer of our local society, and I believe that it was the correct answer. It has been admitted that a seven-year residency does not necessarily make the ideal practicing physician. I have seen any number of instances that prove that point. May I submit this idea, that in addition to whatever procedures these special boards undertake, they be governed by the conduct of the man in practice as judged by his fellow practitioners. That is a most important thing. I wish to endorse the work of these special qualifying or examining boards.

DR. C. B. WRIGHT, Minneapolis: As a member of the House of Delegates, I am just going to voice a word of warning so no one will be disappointed if this should not pass the House of Delegates. There is no one in the profession throughout this country who is more interested in getting good specialization and stopping bad specialization than is the general practitioner. Let us look at this from a practical point of view. In our state we have a state internists' society which, in my opinion, is a much better judge of the qualifications of men to practice internal medicine in the state of Minnesota than the American College of Physicians. There are, however, a good many men who are competent to practice internal medicine who are not members of it. In the American College of Physicians, on the other hand, many of them are competent men, but they have taken in many who are not particularly competent nor are they limiting themselves in any way to the field of internal medicine. Now you turn it over to these groups and say to the profession "We are going to tell you who is qualified to practice a specialty." I think one of the first things that is going to come up in the House of Delegates is this: Are we going to authenticate and give publicity to these men as specialists who do not belong to our organization? Can we compel them to belong to our organization, and can we compel them to keep their membership after they have obtained their diploma to practice the specialty which they wish to practice? We all should like to see something done, but specialization is a new thing in this country. I respect the American College of Surgeons, but has it decreased the number of incompetent men who are practicing surgery? Has it decreased the number of surgeons? I think there are too many. These are a few little practical points that I think must be thoroughly ironed out before the House of Delegates would endorse the American Medical Association's taking up this matter and permitting special societies to be registered in our medical directory.

DR. IRVING S. CUTTER, Chicago: In the course of getting the data relative to the number of available residencies in this country, I found that there are between 700 and 800 graduates in recent years who are still pursuing a course designed to fit them for a special field as assistants to some competent man, so we are still producing the largest number of specialists by the assistantship or apprenticeship plan. I imagine that the total of the Mayo fellowships together with those residencies that are now available would not exceed 400, and some 700 or 800 recent graduates are now taking a three to five year apprenticeship, assistantship, to some competent internist or surgeon or otolaryngologist or what-not.

DR. RAY LYMAN WILBUR, Washington, D. C.: I should like to say that the Council already publishes lists of these specialists, and we publish them whether they are members of the Association or not. The data are sent in by the members, and we record that they belong to special societies; if they state they are specialists, we so indicate, whether they are members

of the Association or not. So while we publish our registry now on a certain basis, we have the responsibility, really, of presenting these lists but we have not carried out the functions of investigation and organization that should be carried out if those lists are to be fully defended. It is largely a matter of doing a good job instead of the one that is being done now. I think, too, that it can be done without any great amount of expense and be done readily in cooperation with all the organizations involved. I have a very definite opinion that no self-selected, self-appointed society that chooses its members on some basis that it sets up can be allowed in America to determine who shall be a specialist and who shall not. The minute we get into the hands of special societies and they tell us what to do in the medical profession, we have lost the opportunity to grow in American medicine.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Discussion of Communicable Diseases.—Control of communicable diseases was the theme of a two-day institute, March 17-18, in San Francisco, at which Dr. William H. Park, director of laboratories, New York City Health Department, was the principal speaker. Dr. Park and others discussed the same subject at a public meeting, March 16. The institute was open to all public health workers in northern California. Four sections were organized, to discuss administrative control of communicable diseases; laboratory control; public health information, and control through food, water and milk. Dr. Park will conduct a similar institute under the auspices of the Southern California Public Health Association in Los Angeles.

Personal.—Dr. Harry V. Brown, Glendale, has been appointed a member of the state board of medical examiners, succeeding the late Dr. Burt S. Stevens, and Dr. George H. Kress, Los Angeles, a member of the state board of health, to succeed Dr. George E. Ebright, San Francisco. —Dr. Charles Weiss, formerly associate professor of applied bacteriology and immunology in ophthalmology, Washington University School of Medicine, St. Louis, has been appointed director of the clinical and research laboratories of Mount Zion Hospital, San Francisco, and associate professor of research medicine in the Hooper Foundation of the University of California. —Dr. Charles R. Illick has been appointed city health officer of Santa Paula, succeeding the late Dr. John Crawford, and Dr. Dragutin D. Todorovic of Dorris, succeeding Dr. Peter Paul Baron. —Dr. Ernest R. Jackson has been appointed city health officer of El Cerrito, succeeding Dr. Frank L. Horne. —Dr. William H. Olds has been appointed professor of clinical surgery at the College of Medical Evangelists, Los Angeles.

COLORADO

Bill Passed.—H. 189 has passed the house, proposing to create a board of chiropractic examiners and to regulate the practice of chiropractic.

Bill Enacted.—H. 258 has become a law, amending the pharmacy practice act, by permitting licensed drug dealers, not registered pharmacists, whose places of business are not less than five miles from a licensed pharmacist, to sell certain drugs, medicines and poisons in original packages, prepared by or under the supervision of registered pharmacists.

FLORIDA

Graduate Course.—A graduate course in medicine will be conducted, June 19-24, by the general extension division of the University of Florida, under the auspices of the Florida State Medical Association, newspapers report. Six lectures each on surgery, obstetrics, pediatrics and medicine, and two each on eye, ear, nose and throat, dermatology, laboratory work and roentgen ray are planned. Sessions will be held in the University of Florida Infirmary, it was said. According to the

announcement, those invited to participate in the course include Drs. William Wayne Babcock, professor of surgery and clinical surgery, Temple University School of Medicine, Philadelphia; John A. Kolmer, professor of medicine at Temple; Chevalier Jackson, professor of bronchoscopy and esophagoscopy at Temple, and John M. Wheeler, director, Institute of Ophthalmology, Presbyterian Hospital, New York.

GEORGIA

Bill Enacted.—H. 141 has become a law, creating a state board of chiropody examiners and regulating the practice of chiropody. Chiropody (podiatry) is defined as "the diagnosis, medical, surgical, mechanical, manipulative and electrical treatment limited to the ailments of the human foot." Licentiatees are prohibited from performing any amputation or using any anesthetic other than local.

ILLINOIS

Bill Introduced.—H. 573 proposes to repeal the law regulating the possession, sale and distribution of narcotic drugs and to enact the uniform narcotic drug act.

Society News.—Dr. Harold Swanberg, Quincy, addressed the Whiteside County Medical Society at Sterling, April 3, on "Radium Therapy in Treatment of Uterine Hemorrhage." —Dr. Drew W. Luten, St. Louis, spoke on "Digitalis Therapy, Old and New," before the Adams County Medical Society in Quincy, March 13. —Dr. Don C. Sutton, Chicago, addressed the Aurora Medical Society, March 2, on treatment of pneumonia. —Dr. James H. Hutton, Chicago, addressed the Macon County Medical Society, March 28, on "Progress in Endocrinology in Its Relation to General Medicine." —Dr. Temple S. Fay, Philadelphia, addressed a meeting in Paris, March 15, on "The Dehydration Treatment of Epileptics." —The Greene County Medical Society, at a meeting in Carrollton, March 10, heard Dr. Warner H. Newcomb, Jacksonville, read a paper on pulmonary tuberculosis. —The Alexander County Medical Society was addressed, March 24, by Dr. Edward Lyman Cornell, Chicago. He also showed a motion picture film on "Physiology and Conduct of Normal Labor." —Speakers before the Fulton County Medical Society at Canton, March 22, were Drs. Roswell T. Pettit, Ottawa; Edwin G. C. Williams, Danville, and Henry W. Grote, Bloomington, who discussed the relation of radiology to general medicine. —Dr. Samuel M. Feinberg, Chicago, discussed food allergy before the Vermilion County Medical Society at Danville, April 4.

CHICAGO

Personal.—Dr. William Allen Pusey was guest of honor at a dinner, March 2, given by the University of Illinois. Speakers included Drs. James B. Herrick, Charles M. Davison and Morris Fishbein, and Howard Fox, New York; Mr. Rufus C. Daves, Chicago, and Harry Woodburn Chase, LL.D., Urbana. —Dr. Edward N. Anderson has been appointed head football coach at Holy Cross College, Worcester, Mass.

Endocrine Club Organized.—At an informal dinner meeting, February 22, the Endocrine Club was organized to further the experimental and clinical study of endocrinology. Physicians who attended the organization meeting included Drs. Peter Bassoe, Laurence H. Mayers, Andrew C. Ivy, Arno B. Luckhardt, Frederic T. Jung, Carroll C. L. Birch, Margaret M. H. Kunde, Hugo R. Rony, James H. Hutton, and Broda O. Barnes, Ph.D. The following program was presented at the first meeting of the club, March 17, at the University of Chicago:

Warren Nelson, Ph.D., Lactation.

Thomas F. Gallagher, Ph.D., Male Sex Hormone.

James F. Regan, A.B., and Broda O. Barnes, Ph.D., Absence of Diabetes in a Dog Whose Hypophysis and Pancreas Had Been Removed.

John J. Westra, S.B., Effect of High Dosages of Iodine on Rabbits.

Dr. Barnes, Studies on the Thyroids, Parathyroid and Pituitary.

IOWA

Dr. Bierring Appointed State Health Officer.—Dr. Walter L. Bierring, Des Moines, has been appointed state health commissioner, effective July 1. Dr. Bierring graduated from the State University of Iowa College of Medicine in 1892, taking graduate work at the University of Vienna, Austria; University of Heidelberg and the École de médecine, Pasteur Institute, Paris. He was professor of pathology and bacteriology at his alma mater from 1893 to 1903, and professor of the theory and practice of medicine, 1903-1910. From 1910 to 1914 he held a professorship in the theory and practice of medicine at Drake University, Des Moines. Dr. Bierring served as president of the state board of health and of the state board of medical examiners from 1914 to 1922.

KANSAS

Bills Enacted.—The following bills have become laws: S. 146, amending the nursing practice act, by (1) requiring all registered nurses to register annually and to pay an annual fee of \$1, and (2) defining an accredited training school for nurses as one requiring its students to be high school graduates and whose training includes at least 450 hours of theoretical instruction; and H. 472, prohibiting the sale or distribution of medicines, drugs or poisons by means of vending machines or other mechanical devices.

Society News.—The Ford County Medical Society dedicated a recent meeting to Dr. Walter F. Pine, who has retired as secretary after fifteen years' service. A traveling bag was presented to Dr. Pine, who was succeeded by Dr. Clifford L. Hooper, Dodge City. Dr. Frank C. Neff, Kansas City, talked on chest conditions in children.—At a meeting of the Clay County Medical Society in Clay Center, January 11, Dr. Lawrence P. Engel, Kansas City, Mo., spoke on surgical treatment of goiter.—Dr. William C. Menninger, Topeka, addressed the Franklin County Medical Society recently on mental health.—The Shawnee County Medical Society was addressed, January 2, by Dr. Henry M. Benning, Topeka, on "Clinical Significance of Acidosis and of Alkalosis."—As guest speaker, Dr. Opie W. Swope, Wichita, addressed the Sumner County Medical Society, January 19, on "Light Through the Various Spectra, with Special Reference to the Combined Application of X-Rays and Radium to Cervical Carcinoma."—Dr. Henry Schmitz, Chicago, addressed the Sedgwick County Medical Society, Wichita, March 20, on cervical carcinoma.—At a meeting of the Wyandotte County Medical Society, Kansas City, April 4, Drs. John B. Nanninga and Maurice A. Walker spoke on "Reactions Following Treatment for Syphilis" and "Value of Simple Laboratory Procedure in Management of Surgical Patients," respectively.

MAINE

Plans for Cancer Control.—The establishment of permanent clinics in the three largest hospitals of the state, in Portland, Lewiston and Bangor, with extension to other hospitals as soon as feasible and an effort to stimulate the use of better records and more thorough follow-up work in all hospitals, form part of a plan for cancer control in Maine. Each year, at the annual meeting of the Maine Medical Association, a paper on cancer will be made a special feature, while one evening session will be devoted to motion pictures dealing with cancer and an exhibit by the American Society for the Control of Cancer. Clarence C. Little, LL.D., Bar Harbor, managing director of the cancer society, will speak at this year's session in June. A definite cancer program will be instituted by every county medical society, and an effort will be made to interest dentists and health officers in the work. It is planned to give lectures on cancer at training schools for nurses. The beginning of a "cured cancer" campaign is also anticipated. At the recent organization meeting Dr. Julius Gottlieb, Lewiston, was elected chairman of the Maine State Cancer Committee.

MARYLAND

University News.—"Progress in Autopharmacology" will be the general title of the Dohme Lectures to be given at Johns Hopkins University School of Medicine by Sir Henry H. Dale, director of the National Institute of Medical Research, London, England, April 20-22.

Bill Introduced.—H. 605 proposes to make it a misdemeanor for any person to obtain or attempt to obtain any narcotic drug or to procure or attempt to procure the administration of any narcotic drug, by fraud, deceit, misrepresentation, subterfuge or the forgery or alteration of a prescription.

Dinner to Dr. Kelly.—Three hundred and seventy-five friends of Dr. Howard A. Kelly, Baltimore, gathered at a dinner, February 20, in celebration of his seventy-fifth birthday. Dr. Thomas S. Cullen, Baltimore, was toastmaster, and speakers included Dr. Walter W. Chipman, emeritus professor of obstetrics and gynecology, McGill University Faculty of Medicine, Montreal, and Dr. Abraham Flexner, director of the Institute for Advanced Study, Princeton, N. J. A special tribute was sent to Dr. Kelly by Dr. William H. Welch, emeritus professor of the history of medicine at Johns Hopkins University School of Medicine, who, since February 1, has been a patient in the Brady Clinic, Johns Hopkins Hospital. Dr. Kelly, who is known as the "father of gynecology," is professor emeritus of gynecology at Johns Hopkins, with which he has been associated since 1889, retiring from active work at the school in 1919.

MASSACHUSETTS

Bills Introduced.—S. 352, to amend the medical practice act, proposes that during the current year persons applying for licenses to practice medicine may be licensed if they are graduates of medical colleges offering a full four years course of instruction of not less than thirty-five weeks in each year, whether or not inclusive of periods covered by holidays and vacations. The medical practice act now requires applicants to be graduates of medical colleges offering "a full four years course of instruction of not less than thirty-six weeks in each year." S. 353 proposes to amend the provision of the medical practice act requiring applicants for licenses to be graduates of medical colleges which give a full four years course of instruction of not less than thirty-six weeks in each year so as to permit the licensing of applicants who are graduates of medical colleges which give a full four years course of instruction of not less than thirty-two weeks in each year.

A Society of Fellows.—Twenty-four young men will be gathered this year at Harvard University, Boston, to form a society designed to provide opportunity for independent creative work by a limited number of graduates of Harvard and other colleges. The "fellows" will be appointed for three year terms and will receive from the university a stipend of from \$1,250 to \$1,500 each, maintenance, and free use of the facilities of the university. Members who give strong indications of production of a fundamental nature may be reappointed for a second term of three years and in exceptional cases thereafter. According to the *New York Times*, the junior fellows will devote their whole time to productive scholarship, free from academic regulations for degrees; they will receive no credit for courses and will not be candidates for degrees. The fact that the first appointment of junior fellows must be made before they are 25 years of age will probably limit the number engaged in medical research in this society.

MICHIGAN

Bill Introduced.—H. 389 proposes to create a board of chiropractic examiners and to regulate the practice of chiropractic. Chiropractic is defined as "The science of locating and removing any interference with the transmission of nerve energy without the use of drugs or surgery." Licentiatees are to be permitted to make and sign birth and death certificates.

"Seniors" Observe Birthday.—Eógar A. Guest was the guest at the first birthday party, recently, of the Quarter Century Club, composed of members of the Wayne County Medical Society in practice more than twenty-five years. More than sixty-five "seniors" were in attendance. One room in the home of the medical society, which was acquired last year, is known as the "Seniors' Room."

Banquet for Dr. Neafe.—The Oakland County Public Health Association and the Oakland County Medical Society gave a dinner, February 15, in honor of Dr. Charles A. Neafe, who has gone to Maine to assume a position as associate director of public health of the state. Henry F. Vaughan, Dr. P.H., health commissioner of Detroit, gave an address on "Medical Participation in Public Health Activities." Guests included Drs. J. Milton Robb, Detroit, president of the Michigan State Medical Society, and Frederick C. Warnshuis, Grand Rapids, secretary of the state society. Dr. Neafe was health officer of Pontiac for seventeen years; he was presented with a leather traveling bag.

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of the Association or not. So while we publish our registry now on a certain basis, we have the responsibility, really, of presenting these lists but we have not carried out the functions of investigation and organization that should be carried out if those lists are to be fully defended. It is largely a matter of doing a good job instead of the one that is being done now. I think, too, that it can be done without any great amount of expense and be done readily in cooperation with all the organizations involved. I have a very definite opinion that no self-selected, self-appointed society that chooses its members on some basis that it sets up can be allowed in America to determine who shall be a specialist and who shall not. The minute we get into the hands of special societies and they tell us what to do in the medical profession, we have lost the opportunity to grow in American medicine.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Discussion of Communicable Diseases.—Control of communicable diseases was the theme of a two-day institute, March 17-18, in San Francisco, at which Dr. William H. Park, director of laboratories, New York City Health Department, was the principal speaker. Dr. Park and others discussed the same subject at a public meeting, March 16. The institute was open to all public health workers in northern California. Four sections were organized, to discuss administrative control of communicable diseases; laboratory control; public health information, and control through food, water and milk. Dr. Park will conduct a similar institute under the auspices of the Southern California Public Health Association in Los Angeles.

Personal.—Dr. Harry V. Brown, Glendale, has been appointed a member of the state board of medical examiners, succeeding the late Dr. Burt S. Stevens, and Dr. George H. Kress, Los Angeles, a member of the state board of health, to succeed Dr. George E. Ebright, San Francisco.—Dr. Charles Weiss, formerly associate professor of applied bacteriology and immunology in ophthalmology, Washington University School of Medicine, St. Louis, has been appointed director of the clinical and research laboratories of Mount Zion Hospital, San Francisco, and associate professor of research medicine in the Hooper Foundation of the University of California.—Dr. Charles R. Illick has been appointed city health officer of Santa Paula, succeeding the late Dr. John Crawford, and Dr. Dragutin D. Todorovic of Morris, succeeding Dr. Peter Paul Baron.—Dr. Ernest R. Jackson has been appointed city health officer of El Cerrito, succeeding Dr. Frank L. Horne.—Dr. William H. Olds has been appointed professor of clinical surgery at the College of Medical Evangelists, Los Angeles.

COLORADO

Bill Passed.—H. 189 has passed the house, proposing to create a board of chiropractic examiners and to regulate the practice of chiropractic.

Bill Enacted.—H. 258 has become a law, amending the pharmacy practice act, by permitting licensed drug dealers, not registered pharmacists, whose places of business are not less than five miles from a licensed pharmacist, to sell certain drugs, medicines and poisons in original packages, prepared by or under the supervision of registered pharmacists.

FLORIDA

Graduate Course.—A graduate course in medicine will be conducted, June 19-24, by the general extension division of the University of Florida, under the auspices of the Florida State Medical Association, newspapers report. Six lectures each on surgery, obstetrics, pediatrics and medicine, and two each on eye, ear, nose and throat, dermatology, laboratory work and roentgen ray are planned. Sessions will be held in the University of Florida Infirmary, it was said. According to the

announcement, those invited to participate in the course include Drs. William Wayne Babcock, professor of surgery and clinical surgery, Temple University School of Medicine, Philadelphia; John A. Kolmer, professor of medicine at Temple; Chevalier Jackson, professor of bronchoscopy and esophagoscopy at Temple, and John M. Wheeler, director, Institute of Ophthalmology, Presbyterian Hospital, New York.

GEORGIA

Bill Enacted.—H. 141 has become a law, creating a state board of chiropody examiners and regulating the practice of chiropody. Chiropody (podiatry) is defined as "the diagnosis, medical, surgical, mechanical, manipulative and electrical treatment limited to the ailments of the human foot." Licentiatees are prohibited from performing any amputation or using any anesthetic other than local.

ILLINOIS

Bill Introduced.—H. 573 proposes to repeal the law regulating the possession, sale and distribution of narcotic drugs and to enact the uniform narcotic drug act.

Society News.—Dr. Harold Swanberg, Quincy, addressed the Whiteside County Medical Society at Sterling, April 3, on "Radium Therapy in Treatment of Uterine Hemorrhage."—Dr. Drew W. Luten, St. Louis, spoke on "Digitalis Therapy, Old and New," before the Adams County Medical Society in Quincy, March 13.—Dr. Don C. Sutton, Chicago, addressed the Aurora Medical Society, March 2, on treatment of pneumonia.—Dr. James H. Hutton, Chicago, addressed the Macon County Medical Society, March 28, on "Progress in Endocrinology in Its Relation to General Medicine."—Dr. Temple S. Fay, Philadelphia, addressed a meeting in Paris, March 15, on "The Dehydration Treatment of Epileptics."—The Greene County Medical Society, at a meeting in Carrollton, March 10, heard Dr. Warner H. Newcomb, Jacksonville, read a paper on pulmonary tuberculosis.—The Alexander County Medical Society was addressed, March 24, by Dr. Edward Lyman Cornell, Chicago. He also showed a motion picture film on "Physiology and Conduct of Normal Labor."—Speakers before the Fulton County Medical Society at Canton, March 22, were Drs. Roswell T. Pettit, Ottawa; Edwin G. C. Williams, Danville, and Henry W. Grote, Bloomington, who discussed the relation of radiology to general medicine.—Dr. Samuel M. Feinberg, Chicago, discussed food allergy before the Vermilion County Medical Society at Danville, April 4.

Chicago

Personal.—Dr. William Allen Pusey was guest of honor at a dinner, March 2, given by the University of Illinois. Speakers included Drs. James B. Herrick, Charles M. Davison and Morris Fishbein, and Howard Fox, New York; Mr. Rufus C. Dawes, Chicago, and Harry Woodburn Chase, LL.D., Urbana.—Dr. Edward N. Anderson has been appointed head football coach at Holy Cross College, Worcester, Mass.

Endocrine Club Organized.—At an informal dinner meeting, February 22, the Endocrine Club was organized to further the experimental and clinical study of endocrinology. Physicians who attended the organization meeting included Drs. Peter Bassoe, Laurence H. Mayers, Andrew C. Ivy, Arno B. Luckhardt, Frederic T. Jung, Carroll C. L. Birch, Margarete M. H. Kunde, Hugo R. Rony, James H. Hutton, and Broda O. Barnes, Ph.D. The following program was presented at the first meeting of the club, March 17, at the University of Chicago:

Warren Nelson, Ph.D., Lactation.
Thomas F. Gallagher, Ph.D., Male Sex Hormone.
James F. Regan, A.B., and Broda O. Barnes, Ph.D., Absence of Diabetes in a Dog Whose Hypophysis and Pancreas Had Been Removed.
John J. Westra, S.B., Effect of High Dosages of Iodine on Rabbits.
Dr. Barnes, Studies on the Thyroids, Parathyroid and Pituitary.

IOWA

Dr. Bierring Appointed State Health Officer.—Dr. Walter L. Bierring, Des Moines, has been appointed state health commissioner, effective July 1. Dr. Bierring graduated from the State University of Iowa College of Medicine in 1892, taking graduate work at the University of Vienna, Austria; University of Heidelberg and the École de médecine, Pasteur Institute, Paris. He was professor of pathology and bacteriology at his alma mater from 1893 to 1903, and professor of the theory and practice of medicine, 1903-1910. From 1910 to 1914 he held a professorship in the theory and practice of medicine at Drake University, Des Moines. Dr. Bierring served as president of the state board of health and of the state board of medical examiners from 1914 to 1922.

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MINNESOTA

Personal.—Dr. Fredolph H. Magney, Duluth, has been appointed a member of the Minnesota Board of Medical Examiners.—Dr. William J. Mayo, Rochester, was elected an associate member of the French Academy of Medicine, March 29, the *Chicago Tribune* reported.

Board of Health Elects.—Dr. Nels G. Mortensen, St. Paul, was elected president of the Minnesota State Board of Health at the recent annual meeting and Prof. Frederic H. Bass, University of Minnesota, vice president. Dr. Albert J. Chesley was reelected secretary. Dr. Erling S. Platou, Minneapolis, has been appointed a member of the board, succeeding Dr. William H. Barr, Wells.

NEVADA

Bill Enacted.—A. 98 has become a law, creating a state board of examiners for the examination and certification of graduate nurses and regulating the professional nursing of the sick. Apparently, persons not licentiates of the board may treat the sick for hire so long as they do not represent themselves as being registered nurses.

NEW JERSEY

Lectures for Passaic County Physicians.—A series of Friday afternoon lectures for practitioners is being given under the auspices of the Passaic County Medical Society. Speakers for April, all of New York, are:

- Dr. Edwin T. Hauser, Treatment of Diabetes.
- Dr. Lewis A. Conner, Diagnosis and Treatment of Certain Heart Disorders of Middle Life.
- Dr. Reuben Ottenberg, Recent Advances in the Diagnosis and Treatment of the Anemias.
- Dr. Aaron S. Blumgarten, Endocrinology.

Personal.—Dr. James Hankinson Rosecrans, Hoboken, was guest of honor at a reception at his home, March 14, marking the fiftieth anniversary of his graduation* from Bellevue Hospital Medical College, New York. Dr. Abraham E. Jaffin, Jersey City, presented Dr. Rosecrans with a set of resolutions in honor of the anniversary.—The staff of Monmouth Memorial Hospital, Long Branch, gave a testimonial dinner, January 28, to Dr. Harry B. Slocum in honor of his completion of ten years' service as chief of staff of the hospital. Dr. Daniel F. Featherston, Jr., Asbury Park, presided and speakers were Drs. William K. Campbell, John E. Maher and Frank J. Altschul, Long Beach, and William G. Herrman, Asbury Park, and Mr. O. N. Auer, superintendent of the hospital.

NEW MEXICO

Health Officers Appointed.—County health officers have recently been appointed as follows: Drs. Eugene P. Simms, Alamogordo, Otero County; James H. Wiggins, Estancia, Torrance County; George T. Colvard, Deming, Luna County; Guy L. Herman, Socorro, Socorro County.

NEW YORK

Requirements for Foreign Medical Graduates.—The New York State Education Department has announced regulations to govern admission of graduates of foreign medical schools to licensing examinations in New York, in harmony with the recommendations recently adopted by the Federation of Medical Boards of the United States (*THE JOURNAL*, March 4, p. 666). Any student who proposes to study medicine in European schools must complete the premedical courses prescribed by the department, must complete a full four year course and an internship, and must pass the examinations for license to practice in the country in which his school is located.

Bills Introduced.—S. 1708 proposes to create a board of chiropractic examiners and to regulate the practice of chiropractic. Chiropractic is defined as "diagnosing and the treating by the palpating and adjusting by hand of the vertebral column and tissues. This shall not include the use of operative surgery or obstetrics or the administering or prescribing of drugs or medicine included in the pharmacopia [sic] or materia medica." H. 2265, to amend the law regulating the practice of podiatry, proposes (1) to prohibit the practice of podiatry by corporations or voluntary associations and (2) to provide that the term "podiatry" shall include "the taking or making of imprints or impressions of the human foot or feet for any purpose whatsoever, conducting foot demonstrations, conducting and maintaining foot clinics or hospitals, the examination and treatment of the human foot or feet and the offering of advice regarding the same."

New York City

Testimonial Dinner to Dr. Park.—The friends of Dr. William Hallock Park, director of laboratories of the New York City Department of Health, will give a dinner in his honor at the Hotel Biltmore, April 19, marking his completion of forty years of public health service.

Society News.—Dr. Frederic E. Elliott, among others, addressed the Medical Society of the County of Kings, March 21, on "Financing Sickness."—Dr. Charles Mazer, Philadelphia, addressed the South Brooklyn Medical Society, March 16, on "Present Status of Organotherapy in Functional Menstrual Disorders and Sterility."—Drs. David Marine and Samuel H. Rosen presented a paper on "Production of Goiter and Exophthalmos by Cyanide," and Drs. Jacob Taub and Edward R. Cunniffe, on "Clinical-Pathological Correlation of One Hundred Cases of Thyroids" before the Bronx Pathological Society, March 28.—Dr. Murray L. Brandt, among others, addressed the Bronx Gynecological and Obstetrical Society, March 27, on "Mechanism and Management of the Third Stage of Labor."—The New York Institute of Clinical Oral Pathology was recently organized with an advisory board composed of Drs. James Ewing, George H. Semken, Abraham Flexner and Harlow Brooks. Membership is limited to 100. The institute maintains a pathologic laboratory and a registry of cases.—Dr. Robert H. Kennedy addressed the New York Surgical Society, March 8, on "Epithelioma of the Lip."—Drs. Haven Emerson and Frederic Elliott discussed the report of the Committee on the Costs of Medical Care at a meeting of the Women's Medical Association of New York City, March 8.—Dr. Harry C. Solomon, Boston, among others, addressed a joint meeting of the New York Neurological Society and the section of neurology and psychiatry of the New York Academy of Medicine, March 7, on "Treatment of General Paresis with a Combination of Fever and Tryparsamide."

NORTH CAROLINA

Bill Introduced.—H. 502 proposes to accord hospitals treating persons injured through the negligence of other persons liens on all claims which such injured persons may have against the persons or corporations whose negligence caused their injuries.

Society News.—Dr. Julian A. Moore, Asheville, addressed the Buncombe County Medical Society, Asheville, February 6, on pneumolysis.—Dr. James K. Hall, Richmond, Va., addressed the Raleigh Academy of Medicine at its annual dinner, February 9, on "Individuality and Environment."—Dr. Archibald A. Barron, Charlotte, presented a paper on "The Need of Careful Diagnostic Study and Better Understanding of the Mental and Nervous Patient" at a meeting of the Mecklenburg County Medical Society, Charlotte, February 21.—Dr. Henry H. Menzies, Hickory, was elected president of the Catawba Valley Medical Society at a recent meeting in Morganton.

OKLAHOMA

Bill Introduced.—H. 652 proposes that every hospital which maintains a charitable department or ward, in lieu of ad valorem taxes and in addition to the tax required under the general income tax laws of the state, shall pay 1 per cent of the net income derived from its operation.

Society News.—The quarterly meeting of the Southern Oklahoma Medical Association was held in Ada, March 7. Among the speakers were Drs. John L. Goforth, Dallas, Texas, on "Value of Biopsy in Diagnosis, Treatment and Prognosis of Cancer"; Basil A. Hayes, Oklahoma City, "Nonspecific Diseases of the Genito-Urinary Tract," and Abraham L. Blesh, Oklahoma City, "Surgical Problems in Treatment of Toxic Goiter."

PENNSYLVANIA

Society News.—The program of the Pittsburgh Academy of Medicine, March 14, included addresses by Drs. John M. Johnston, on "The Brain Stem in Pneumonia" and Harry R. Decker, "Surgical Treatment of Pulmonary Suppuration."—At the meeting of the Allegheny County Medical Society, Pittsburgh, March 21, Dr. Russell R. Jones, chairman of the public relations committee, made a preliminary report on the dispensary situation in Pittsburgh; the scientific program included addresses by Drs. John Clarence Kelly, McKeesport, on "Clinical Aspects of Cancer of the Cervix"; David L. Simon "Urinary Infections in Children"; John Day Garvin, "Stomach Therapy in a Depression," and John G. Bowman, Litt.D., chancellor of the University of Pittsburgh, "Educa-

tional Aspects of the Practice of Medicine."—Davenport Hooker, Ph.D., and Ira D. Hogg, Ph.D., addressed the Pittsburgh Neurological Society, March 20, on "Human Fetal Activities."

Bills Introduced.—S. 718, to amend the optometry practice act, proposes to make it unlawful for a registered optometrist to display any word or words descriptive of his profession other than the word "optometrist." If the word "optometrist" is displayed by a registered optometrist, it is to be set forth in letters equal in size to the size of the letters used in the optometrist's name. H. 1606, to amend the osteopathic practice act, proposes to strike out that provision which requires all applicants for licenses to have had one year of college credits in chemistry, biology and physics before beginning their osteopathic study. The bill proposes to permit applicants to receive these college credits any time before applying for licenses. H. 1645, to amend the law regulating the operation of maternity hospitals in cities of the third class, in boroughs, in towns and in townships, proposes to increase license fees from \$10 to \$15. H. 1648, to amend the laws regulating the operation of private hospitals and private nursing homes, proposes to increase license fees from \$10 to \$15. H. 1939, to supplement the workmen's compensation act, proposes to make compensable thirteen different occupational diseases when contracted in the course of an employment covered by the act.

Philadelphia

Personal.—Dr. Carle Lee Felt, of the surgical staff of Stetson Hospital, was guest of honor at a luncheon given by hospital associates and officials of the John B. Stetson Company recently. He retires this year after twenty-five years' association with the hospital.—Dr. Robert G. Torrey, medical examiner in the tuberculosis division of the Philadelphia department of public health, recently received from his associates a desk set in honor of his completion of twenty-five years of public health service.

Society News.—Drs. James M. Baty and Louis K. Diamond addressed the Philadelphia Pediatric Society, March 14, on "Leukemia in Childhood" and "Anemia of Prematurity," respectively.—Drs. Stephen Dana Weeder and Calvin M. Smyth, Jr., were the speakers at a meeting of the Philadelphia Academy of Surgery, March 6, on "Pilonidal Cysts" and "Problem of Recurrent Hernia," respectively.—Drs. Joseph A. Perrone, Rankin, and Gabriel Tucker, among others, addressed the Philadelphia Laryngological Society, March 7, on "Thrush (Monilia Albicans) of the Larynx and Esophagus."—Dr. Alfred Gordon, among others, addressed the Philadelphia Psychiatric Society, March 10, on "Obsessional Phenomena in Schizoid Individuals in Relation to Eventual Schizophrenia."—The Franco-American Institute of Science was recently chartered in Philadelphia for the purpose of maintaining an international association "for the promotion of science and the perpetuation of friendly relations and cooperation between scientists of France and of America." Dr. Alfred Stengel is a member of the board of directors.

TENNESSEE

State Medical Meeting at Nashville.—The one hundredth annual session of the Tennessee State Medical Association will be held in Nashville, April 11-13, with headquarters at the Hotel Hermitage. The tentative program announces that Dr. Dean Lewis, Baltimore, President-Elect of the American Medical Association, will make an address on surgery; Dr. Olin West, Chicago, Secretary and General Manager of the Association, will discuss the report of the Committee on the Costs of Medical Care, and Drs. Roger S. Morris, Cincinnati, and George E. Brown, Rochester, Minn., will speak on "The Role of the Hematopoietic Hormone in Diseases of the Blood" and "Recent Concepts of Hypertension," respectively. Among Tennessee physicians who will make addresses are:

Dr. William T. Pride, Memphis, Acidosis and Alkalosis in Pregnancy.
Dr. John C. Ayres, Memphis, Present Status of Hormone Therapy in the Female.
Drs. William D. Haggard and Carl R. Crutchfield, Nashville, Goiter.
Dr. Milton Smith Lewis, Nashville, Sodium Amytal in Treatment of Eclampsia.
Dr. Herman Spitz, Nashville, Bronchial Asthma.
Dr. Edward Dunbar Newell, Chattanooga, Peritoneal Drainage.
Dr. Tom R. Barry, Knoxville, Primary Carcinoma of the Ureter.
Dr. Claude P. Fox, Jr., Greeneville, Anesthesia from the Standpoint of the Surgeon.

The Tennessee State Pediatric Association will hold its annual meeting in Nashville, April 10, with Dr. William Weston, Columbia, S. C., as guest speaker, on "Recent Progress in the Solution of Problems in Nutrition." The Ten-

nessee Academy of Ophthalmology and Otolaryngology will also meet, April 10, with Dr. Harris H. Vail, Cincinnati, as guest speaker, on "Certain Phases of Vidian Neuralgia."

Bills Introduced.—S. 489 and H. 768 propose to create a board of cosmetic therapy and to regulate the practice of cosmetic therapy. Licentiatees are to be permitted, among other things, to remove superfluous hair about the face. Apparently, the manner in which they may remove superfluous hair is to be left to their discretion. H. 505 proposes to authorize the governor to appoint a public health council to consist of six licensed physicians and one licensed dentist. The council is to formulate the policies of the department of public health and is to select the commissioner of public health. H. 705 proposes, in effect, to permit licensed dentists to make and sign death certificates. H. 714 proposes to authorize the sexual sterilization of certain socially inadequate inmates of state institutions. Nothing in the act is to be construed to prevent the medical or surgical treatment for sound therapeutic reasons of any person by a licensed physician, which treatment may incidentally involve the nullification or destruction of the reproductive functions. H. 857 proposes to authorize the governor to appoint a public health council to consist of three licensed physicians, one licensed dentist, one faculty member of a standard teachers' college or university, and one person appointed from the membership of the Tennessee Congress of Parents and Teachers or the Tennessee Federation of Women's Clubs, and the commissioner of public health. The council is to govern the general policy of the state department of public health and is to nominate the commissioner of public health for appointment by the governor. H. 891, to amend the workmen's compensation act, proposes that whenever an employer requires an injured employee to submit to a physical examination the employee is to have the right to select his own physician at the employer's expense. H. 940, to amend the laws regulating the possession and distribution of narcotic drugs, proposes to classify "cannabis indica or cannabis americana, commonly known as loco weed" as a narcotic drug.

VERMONT

State Board Appointment.—Dr. Frank A. Walsh, Readsboro, has been appointed a member of the Vermont State Board of Medical Registration to succeed Dr. Michael F. McGuire, Montpelier.

WEST VIRGINIA

Society News.—Dr. Paul B. Steele, Pittsburgh, addressed the Monongalia County Medical Society, Morgantown, February 7, on "Subacromial Bursitis."—Dr. Archer A. Wilson, Charleston, addressed the Kanawha County Medical Society, February 14, on "Practical Information Obtained from Examination of Spinal Fluid."—A symposium on influenza was presented before the McDowell County Medical Society in February by Drs. Cecil F. Johnston, Welch, Victor L. Wetherby, Welch, and Albert C. Van Reenen, Davy.—Drs. Thomas W. Moore and James R. Bloss, Huntington, addressed the Logan County Medical Society, Logan, on iritis and obstetric forceps, respectively.—Dr. Claude Frazier, Montgomery, presented a paper on hematemesia before the Fayette County Medical Society, Montgomery, February 14.—Dr. Otto H. Schwarz, St. Louis, addressed the Ohio County Medical Society, Wheeling, March 17, on "Puerperal Infection: A Discussion of Endogenous and Exogenous Types."

WYOMING

Changes on State Board of Medical Examiners.—Four new members were recently appointed to the State Board of Medical Examiners: Drs. Joseph R. Hylton, Douglas; Walter M. Lacey and Clyde Y. Beard, all of Cheyenne, and William A. Steffen, Sheridan. T. W. Tarrant, D.O., Laramie, was reappointed. The new terms begin in May.

GENERAL

Physical Therapy Organizations Merge.—Announcement is made of the amalgamation of the American Physical Therapy Association with the American Congress of Physical Therapy, the joint organization to be known by the latter name, with central offices in Chicago. The twelfth annual session of the congress will be held in Chicago, September 11-15, at the Palmer House, under the presidency of Dr. Gustav Kolischer.

Board to Regulate European Students.—The National Board of Medical Examiners has adopted rules in harmony with the regulations adopted by the Federation of Medical Boards of the United States concerning the acceptance of

students trained in European medical schools. Under the new requirements, candidates for the board's diploma must present evidence of premedical education equivalent to the requirements of the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association. He must have graduated from a four year medical course in Europe and must have obtained a license to practice medicine in the country in which the medical school from which he graduated is located.

Medicinal Liquor Bill Becomes Law.—President Roosevelt signed the Celler-Copeland bill relating to the prescribing of medicinal liquor, March 31, after it had passed the House of Representatives, March 30, by a rising vote of 153 to 59, and the Senate, March 29, without a roll call. The new law repeals legislation which limited the physician's right to prescribe liquor by arbitrary quantitative restriction by providing that "no more liquor shall be prescribed to any person than is necessary to supply his medicinal needs." The Attorney General and the Secretary of the Treasury are, however, authorized to issue regulations limiting the quantity to be prescribed at any one time. Until such new regulations are issued, existing regulations will continue in force. Beginning January, 1934, ordinary prescription forms may be used, but they must be stamped by a special stamp issued by the Commissioner of Industrial Alcohol. Physicians will be required to keep in their offices book records showing the nature of the ailments for which prescriptions are given; these records are to be open to inspection by accredited officers charged with enforcing the prohibition laws.

Society News.—The National Medical Association will hold its annual meeting in Chicago in August. Dr. Morris Fishbein, Chicago, will address the association at the annual banquet, August 17, on "Changes in the Nature of Medical Practice."—The Medical Library Association of the United States will hold its annual meeting in Chicago, June 19-21.—The Polish Medical and Dental Association of America will hold its next annual convention in Chicago, July 17-19.—The Southern Medical Association announces that the 1933 session will be held in Richmond, Va., November 14-17.—Dr. Gerry R. Holden, Jacksonville, Fla., was named president-elect of the Southeastern Surgical Congress and Dr. William M. Scruggs, Charlotte, N. C., vice president, at the annual meeting in Atlanta, March 8. Dr. Willis C. Campbell, Memphis, Tenn., became president and Dr. Benjamin T. Beasley, Atlanta, was reelected secretary.—Dr. Benjamin F. Bailey, Lincoln, Neb., was elected president of the Northwest Regional Conference at its recent meeting in St. Paul, in February, and Dr. Harold M. Camp, Monmouth, Ill., secretary.—The Catholic Hospital Association will hold its annual meeting in St. Louis, June 12-15.—The National Committee for Mental Hygiene has discontinued the *Mental Hygiene Bulletin*, for reasons of economy.

Medical Bills in Congress.—*Bills Introduced:* H. R. 3073, introduced by Representative Kelly, Pennsylvania, proposes to authorize the Bureau of Mines to manufacture radium for use by the Administrator of Veterans' Affairs in the treatment of diseases of persons receiving hospitalization in the United States Veterans' Administration hospitals. H. R. 3207, introduced by Representative Martin, Colorado, proposes to authorize an appropriation not to exceed \$400,000 for the reconditioning of buildings at the United States Veterans' Administration Hospital, Fort Lyon, Colorado. H. R. 3768, introduced by Representative McCormack, Massachusetts, proposes to change the name of the retail liquor dealers' stamp tax in the case of retail drug stores or pharmacies to "medicinal spirits stamp tax." H. R. 4335, introduced by Representative Rogers, Massachusetts, proposes to authorize an appropriation of \$1,400,000 for the erection of a new hospital and diagnostic center at Boston. H. R. 4351, introduced by Representative Kvale, Minnesota, proposes to extend the privileges of compensation and hospitalization to American citizens who volunteered in the French forces and who, while serving in the Foreign Legion or while serving in flying status in the Lafayette Escadrille or Lafayette Flying Corps, received injuries of a permanent nature of more than 10 per cent degree in line of duty between April 6, 1917, and Nov. 11, 1918.

CORRECTION

Tuberculosis Mortality in the Netherlands.—The Netherlands correspondent wrote in his letter in *THE JOURNAL*, March 18, that the mortality from tuberculosis in that country in 1931 had dropped to 7.31 per hundred thousand inhabitants. The figure for the mortality rate probably was intended to be 73.1.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 11, 1933.

Automobile Accidents

A bill that will enable persons injured on the roads by automobiles to recover compensation without proof of negligence on the part of the owner or user of the car was read a second time in the house of lords. In supporting the bill, Lord Moynihan pointed out the burden placed on the physician and on hospitals by road accidents. The physician was called at what might be the busiest part of the day to render service and supply drugs and dressings, which was rarely remunerated. A central pool should be established, to which every insurance company concerned in motor accidents should pay a small sum annually. From this pool physicians who were not otherwise remunerated should be paid a fee for first aid to the injured. No small measure of the success of insurance companies depended on the treatment given in hospitals, but the companies showed small recognition of this fact. Much of the burden of road accidents was borne by the smaller hospitals. The objection was made by the government that the bill went too far, as it would increase the number of claims and the amount paid in compensation, and so increase the motor insurance premiums. It was decided to send the bill to a select committee, where the questions raised would be fully examined.

The Slippery Slope of Socialism

The national health insurance act provides only a general practitioner service. Naturally, demands for extension of the act are being made, and schemes to carry this out are being brought forward. If it is the duty of the state to supply one form of treatment it is logical that it should supply all forms, and specialists are always urging this. But financial stringency stands in the way. The British Medical Association even brought forward a scheme for the fullest possible medical service for the greater part of the nation through the coordination of private practice, state service, hospitals and the ancillary branches of medicine. This was at the time the socialist government was in power and more medical socialism seemed imminent. The association thought that it would be better to have its own scheme, in which the general practitioner still retained some autonomy, than the universal conversion of physicians into state officials. But the prodigal expenditure of the socialists brought the country within sight of ruin and with their defeat stopped for the time any grandiose medical scheme. However, the demand for extension of the service provided by the insurance act continues, and once on the slippery slope of medical socialism downward movement is always threatening. In the association's scheme, arrangements for a comprehensive dental service were included. Quite apart from the insurance act, there is a good deal of dental socialism in existence—in connection with maternity and child welfare, tuberculosis and school services, and industrial dental schemes. A committee of the British Dental Association has examined the question of the provision of dental benefit under the insurance act and made a report, which points out that, dental health being an important factor in general health, the prevention and early treatment of dental disease is most important. For this, examination at regular intervals is necessary. An itemized scale of fees for the treatment of insured persons would therefore not be in their best interests. Payment on a capitation basis and a panel system would leave the dentist free to exercise his professional judgment and insure the contact between patient and dentist necessary for prevention and maintenance of dental fitness. It would foster the development of the family dentist,

analogous to the family doctor, whose importance has been stressed by the British Medical Association. Every insured person should be assured of the services of such a practitioner. In return for the annual capitation fee, the dentist will contract to supply all the treatment and prosthetic work that falls within the definition to be laid down. But before accepting a person for admission to his list the dentist will be entitled to require that any treatment required to render him dentally fit shall be previously carried out. The scope of the treatment would include scaling, gum treatment, filling with plastics, root treatment, extractions with local and general anesthesia other than prolonged, and the provision and upkeep of dentures necessary for the maintenance of a reasonable standard of mastication and general appearance. The committee had great difficulty in arriving at a suitable capitation fee but concluded that it lay within the limits of \$3 and \$4 per annum. It is noteworthy that this is much more than the physician's capitation fee under the panel system, which is under \$2. The dentist should encourage the patient to attend periodically for examination.

Adulterated Articles in Food Supply

The report for 1931 on the sale of food and drugs, just published by the ministry of health, shows that adulteration is declining. The number of samples of food and drugs submitted to public analysts was 136,169, of which 6,324, or 4.6 per cent, were found to be adulterated or not up to standard. This compares favorably with 4.8 per cent in 1930 and 5.4 per cent in 1929. There were 561 contraventions of the act regulating preservatives in food, but in 207 cases the use of the preservative would have been permissible if its presence had been declared on the label. Of 70,201 samples of milk analyzed, 4,507 were adulterated or not up to standard. Of 10,502 samples of butter, 96 were adulterated or not up to standard, and of 1,573 samples of cheese, 40 were reported on adversely. Twenty were wrapped, and tin in varying proportion was found in them, the proportion being as high as 7 grains to the pound in one. However, the efforts recently made by manufacturers to reduce the degree of contamination from the tinfoil used to wrap cheese appear to meet with some success. In a sample of strawberry jam, only one fourth of the fruit was strawberries. Twenty-eight samples sold as "bread and butter" were bread and margarine, and in ten samples of cream buns and cream cakes the "cream" was wholly or partially vegetable fat. Nine samples of sausage were deficient in meat. Copper was found in several articles; the paper tips of some chocolate cigarets contained 800 parts per million.

The Low Irish Marriage Rate

The Roman Catholic Church is the one body in the British Isles which is resolutely opposed to artificial methods of birth control. It is therefore of interest to observe the course of population in a country where its teaching is followed. At a meeting of the Statistical and Social Inquiry Society of Ireland, Mr. James Meenan read a paper on the Free State marriage rate, which had been at a low level since the registration of marriage was made compulsory in 1864. There was a prolonged decline over the period 1873-1894, followed by a recovery, which was sustained until about 1920. Since then the rate had again declined. The principal causes of changes in the rate are the state of agricultural prices and the conditions of land tenure. Certain aspects of Irish life, such as the late age at which people entered gainful occupations, the absence of female employment and the low mortality among the older age groups explain the growing proportion of the unmarried and the postponement of marriage to an age which was steadily growing later. A further fall in the marriage rate, with a declining birth rate, would result in an excess of deaths over births. Thus Ireland, where the attitude toward

birth control is hostile, is threatened with a similar decline of population as England, where there is no such hostility. Economic pressure is limiting population in both countries, but the mechanism in Ireland differs from that in England in that it is entirely a low marriage rate and late marriages.

Breeding from the Unfit

Dr. John Gifford of the Lancashire County Mental Hospital, in lecturing at a meeting of the Royal Sanitary Institute, repeated the warning of eugenists that there is too much breeding from the unfit. He pointed out that in a single generation the maternity and child welfare centers had halved the infant mortality. This unprecedented saving of life meant that many of the weakest stamina and poorest breed were being saved. Mental deficiency, bronchitis and dyspepsia were increasing. One in ten of the population was too dull or too sickly to earn a living unaided. One in 200 was or had been insane. One in 120 was feeble-minded. Dr. Gifford urged that physicians should be trained to advise on conception control and in hereditary prognosis. There was a section of mental defectives that should be sterilized. This would have the advantage not only of preventing the production of defective children but also of removing the need for segregation.

PARIS

(From Our Regular Correspondent)

Feb. 22, 1933.

The Depopulation of the Island of Corsica

The island of Corsica, while it is not the least populated of the departments of France, is nevertheless the department in which depopulation is progressing most rapidly, owing to the constant decline in the birth rate. The birth rate for Corsica is 15.2 per thousand of population, whereas the average birth rate for France is 18.8 per thousand. The cause of this condition is peculiar and affects only this department. Corsica has the lowest percentage of marriages. Most of the young men go to the continent around the age of 18, to seek employment as government clerks. Corsica is covered in the center and in the western part by high mountains with many wooded tracts. In the eastern part there are many shallow rivers, which are a prolific source of malaria. There is little industrial development in the country and little commerce, except for a small area in the vicinity of the port of Ajaccio and a few grape-growing regions. The Corsican is abstemious and appears to have no need of luxuries. He is content to tend his sheep and his goats and to gather chestnuts in the woods. Much of this work is commonly left to the women and to the old men, of whom there are a great number, for their remarkable sobriety appears to be conducive to longevity. The young men come to France seeking service in the army or on the police force, which is more to their taste than agriculture or mining. Many civil service posts are held by Corsicans, all of whom return to their native land when they reach the age for retirement, and live without working, on their modest pensions. There are many women of marriageable age; 66.3 per thousand of the Corsican women are unmarried. The natural consequence is that the birth rate is low. There are only 400 married women per thousand of female population, as compared with 600 per thousand in the other departments of France. Corsican women are noted for their fecundity. In the island, statistics show 141 living new-born per thousand households, whereas, in continental France, the figure drops to 109, and even to 80 per thousand in some departments of France.

Preventive Medical Centers

Medical centers for the general examination of patients, such as have existed for some time in some other countries, are beginning to be established in large cities of France. They have encountered some opposition on the part of the medical

syndicates. The patients, it is pointed out, go direct to these centers without the advice of their attending physician; nevertheless, the group that has been formed under the chairmanship of Mr. Justin Godart, under the name of Parti social de la santé publique, is making great efforts to promote these centers in all departments of France. To appease the medical syndicates, it recommends that the family physician remain in close touch with the physicians in charge of these centers. The patient should make known at the center the name of his physician, who would then receive from the center a complete statement of the diagnosis. It is plainly specified that only the family physician should be entrusted with the treatment. Furthermore, the Parti social de la santé publique requests that the mayors of the communes send it a list of all births, provided the mother has no objections. The *parti* will then immediately send a visiting nurse to instruct the families in the principles of rational puericulture.

Decline in Accidents in Paris

According to statistics collected by the police of Paris, traffic accidents, during 1932, caused the deaths of 237 persons in Paris proper and 218 more in the Paris area, or a total of 455. This figure is lower by 148 than that for 1930, and lower by 44 than that for 1931, in spite of the increase in the total number of automobiles. The list of victims in 1932 includes 56 per cent of pedestrians, 16.5 per cent of cyclists, and 27.5 per cent of occupants of various vehicles. Fifty-three per cent of the accidents were due to errors on the part of drivers of vehicles, while 43 per cent were due to the negligence of victims. In 4 per cent of the cases, the responsibility could not be established. The accidents are distributed as follows: taxicabs, 45, 24 of which were due to the errors of drivers; private vehicles, 175, 109 of which were due to the errors of drivers; trucks, 132; motorcycles, 30; bicycles, 10; tramways, 31; horse-drawn vehicles, 14. The number of fatal accidents was highest during the afternoon. Sixty-eight accidents occurred between 1 and 3 p. m. and 118 between 5 and 9 p. m.

Personal

Dr. D. N. Eisendrath of Chicago has been appointed surgeon to the American Hospital in Paris, his special field being urology. In 1932 he was made a chevalier of the Legion of Honor.

BERLIN

(From Our Regular Correspondent)

March 6, 1933.

Blood Donors

In Berlin, an organization of blood donors for the municipal hospitals is to be worked out after the pattern of that already existing in the state of New York. The need of such organization is widely felt, for transfusion for therapeutic purposes has acquired great importance. As Prof. Ernst Unger sets forth in an article in the *Deutsche medizinische Wochenschrift*, the state of New York has been trying out detailed regulations, which have now been enacted into law. Other organizations exist in foreign cities. Germany has had hitherto no organizations under official supervision, although some of the larger hospitals have established a special "donor group." Smaller hospitals and individual physicians are not in a position to make a suitable selection of donors, and thus a number of accidents have occurred. Narcotic and alcohol addicts have sometimes offered to serve as donors. In Berlin, the charge for 350 cc. of blood is 10 marks, or \$2.38; up to 500 cc., 15 marks, or \$3.57; and up to 1,000 cc., 20 marks, or \$4.76. As a rule, relatives of the recipient, who demand no compensation, are preferred, since relatives are especially suitable as donors. In some cities, voluntary donors are rewarded by the presentation of diplomas, and employees who serve as donors are

given a holiday. If other patients serve as voluntary donors, certain luxuries not usually dispensed are added to their diet. In Paris, a nurse who has served twenty-three times as donor was awarded the Cross of the Legion of Honor. The first examination of the donor should be made by a thoroughly trained clinical physician. Regular periodic examinations are necessary. Only such persons should be used as donors as have been examined in the current or in the previous month. Donors in Berlin receive a certificate that informs them about their rights and duties. They are compelled to report any illness to the blood donors' central, and they must appear regularly for examination.

Changes in the Social Insurance System

The political changes in the German *reich* will bring some changes in health insurance. As is well known, *kranken*kassen patients have been required, for some time, to pay, in addition to their regular dues, a further fee in case of illness. For the sickness voucher, which they must secure before seeking medical aid, they must pay 12 cents and must contribute the same amount toward the cost of each prescription. The federal cabinet has again made a searching inquiry with regard to the sick voucher fee paid by applicants for medical aid, and it was decided to abolish the sickness voucher. For the time being, owing to the necessity of economy in the *kranken*kassen, the fee will be reduced one half, or to 6 cents. In order to eliminate entirely the sick voucher fee, a reorganization of the whole system of *kranken*kassen will be necessary. The whole financial system of the *kranken*kassen is to be carefully studied. The federal cabinet will soon take the necessary steps leading up to this reorganization. Persons interested in health insurance look forward with interest to the outcome of these deliberations.

Medical Care in the Voluntary Work Service

The organization of the voluntary work service was described in THE JOURNAL, March 25, p. 983. Now an agreement has been reached between the federal commissary of the voluntary work service and the medical syndical leagues, the Hartmann league and the *Deutscher Aerztevereinsbund*, concerning the medical care that the participants in the voluntary work service are to receive. The Hartmann league has agreed to provide for the examination of applicants and for the payment of the fees required by physicians. The league will organize the medical service in the camps, through the federations of the local sick benefit associations, under contracts drawn up with the cooperation of the bureau of labor. For every camper, the same fee will be paid to the league of the *kranken*kassen that is paid for the unemployed members of the local and provincial *kranken*kassen having jurisdiction. The medical care will be given chiefly by the panel physicians of the *kranken*kassen; but it will be permissible for physicians who have not been admitted to panel practice to serve in that capacity, provided they are residents of the area controlled by the federation of *kranken*kassen. Such physicians will then be regarded as representatives of the panel physicians. Also physicians not admitted to panel practice, but who may be participants in the voluntary work service, may, on request of the camp, be assigned medical work among the campers. They will be granted a compensation if their service relieves the panel physicians of their responsibilities. The Hartmann league will petition the federal commission to grant that physicians not previously admitted to panel practice may count their activity in the voluntary work service (up to six months) toward the three years of clinical activity, which must precede admission to full panel practice. This agreement opens up to the medical profession a new rôle in the line of professional self-administration, which, in case there is a further extension of the voluntary work service or possibly the introduction of a general compulsory work service, will gain importance.

Celebration of Society for Combating Alcoholism

The Deutscher Verein gegen den Alkoholismus celebrated the fiftieth anniversary of its founding, March 29. The association can look with pride on its accomplishments, which have contributed much to the welfare of the people. Among the founders of the association was a physician, Professor Nasse of Bonn, who served as the first president. There is no question that the association has contributed much toward strengthening the belief among all strata of the population that the crusade against alcoholism is a fight for child welfare and family happiness as well as for the security and progress of civilization. Nor is there any doubt that the consumption of alcoholic beverages in Germany has declined. During the years immediately following the war, there was a distinct reduction in the amount of morbidity due to the abuse of alcoholic beverages, but the improvement did not continue and the trend is now in the other direction, the number of illnesses due to such causes amounting at present to more than 13,000 a year. The number of mental and nervous patients being cared for in institutions, and the number of misdemeanors, crimes and traffic accidents that are closely connected with alcoholism are still great. The association comprises at present 254 constituent chapters, together with numerous groups of specialists and 115 caretaking centers for alcoholic addicts. The association does not seek to promote total abstinence but wages a battle against inebriety, which must have the hearty support of all physicians.

VIENNA

(From Our Regular Correspondent)

Feb. 15, 1933.

Syphilis of Central Nervous System

Prof. Dr. M. Schacherl delivered, in the Medicinisches Doktoren-Collegium, an address on the treatment of syphilis of the central nervous system, which he divided into *lues cerebrosplanialis*, and *tabes dorsalis* and *dementia paralytica*. The first group affects the connective tissue and the blood vessels, or the mesodermal parts; the second group concerns the nerve tissue proper, the ectoderm. The transitions between the two groups are not sharply drawn, and not infrequently combinations of the two groups appear. In the diseased organs, virulent spirochetes of syphilis are always found. Years ago, before the syphilitic nature of *tabes* and *dementia paralytica* had been demonstrated, it was observed that iodine and mercury, the usual antisyphilitic treatment, was unavailing in those disorders, and that many other syphilitic disorders of the central nervous system remained refractory to that treatment. It came to be known that the medicine introduced into the blood stream easily came into action against the "mesodermal elements" but that the spirochetes "anchored" in the nervous tissue in "ectodermal syphilis" were hard to reach. Further research showed that a barrier exists between the blood and the cerebrospinal fluid, which prevents the entrance not only of spirochetes but also of medicines into the nervous system. This barrier consists of the meninges and the choroid plexuses, and not until it is damaged to such an extent that it is permeable to certain substances can the colonies of virulent spirochetes be successfully attacked. That condition is brought about either by the production of artificial fever or by the administration of an abnormally heavy single dose of an antisyphilitic remedy or normal doses over long periods. Or the barrier can be avoided by introducing a medicine through a lumbar or a cisterna puncture, directly into the cerebrospinal fluid. This route, however, permits only a weak concentration of the medicine, since strong solutions injure the nervous parenchyma. Such a puncture would have to be frequently repeated, which is hard to carry out. It has been found that a single spinal injection of, for instance, 0.001 Gm. of ars-

phenamine, or of 2 cc. of horse serum, is sufficient to cause permeability of the meninges to medicines administered by the intramuscular or by the intravenous route, for a period of sixty hours, which corresponds to the duration of the injury of the meninges caused by the lumbar puncture. If one desires to cause an injury of longer duration and thus permeability of the barrier, for the purpose of treatment, one needs only to administer repeated doses of medicines as soon as the first lumbar injection has fulfilled its purpose. The permeability can thus be preserved as long as is desired. Lumbar puncture with a positive Wassermann reaction and an increased lymphocyte count shows that treatment is necessary, but if the lymphocyte count is normal, a waiting policy may be pursued. Repeated punctures (every two or three months) will furnish an indication as to whether the syphilis is latent or active. A positive Wassermann reaction is of itself no indication for treatment. If courses of treatment are given too often or with too short intervals, strains of spirochetes are produced that become refractory toward arsphenamine, iodine, mercury or bismuth, and later are resistant to all treatment. Professor Schacherl recommended the following method: every other day, 0.30 Gm. of neoarsphenamine, fifteen injections in all, or a total of 4.5 Gm., or at the most 5.5 Gm., for each course of treatment; all injections to be given intravenously. During the treatment, the liver and the kidney must of course always be carefully watched. A combination with bismuth is likewise recommended; also a strengthening of the treatment, in dementia paralytica, with malaria or recurrent fever is advised. A high fever should not be induced because of the general injury to the organism. To combat the "crises" that may appear during the treatment, hypnotics rather than antipyretics should be employed.

The Unequal Distribution of Physicians

During the investigation to discover what means can be taken to lessen the number of medical students, statistics were collected on the number and distribution of physicians in Vienna and in the republic of Austria. Dr. Sonnenfeld discussed these data in "Mitteilungen der Wiener Aerztekammer." We learn that, during the period 1927-1931, the number of registered physicians in Vienna increased only by 103 (from 4,075 to 4,178), or an average of twenty physicians a year. Only in 1927 and in 1930 was there an actual increase, whereas the other three years showed a decrease. Not until 1932 was a further (slight) increase observable. With a population of about 1,860,000, in 1932, 4,820 physicians were counted, but of that number only 3,586 were engaged in practice, the remainder being either medical officials or interns in hospitals. Of the total number 3,586, 1,862 were general practitioners, 1,060 were specialists, and 664 were physician-dentists, to which number may be added 1,172 "dental technicians," who are not physicians. The distribution of the specialists follows: 76 surgeons, 141 dermatologists (including syphilologists), 154 gynecologists and obstetricians, 169 internists, 27 specialists in respiratory diseases, 76 neuropsychiatrists, 64 ophthalmologists, 25 orthopedic surgeons, 97 otorhinolaryngologists, 91 pediatricians, 32 physical therapists, 53 roentgenologists, 37 urologists—and eighteen laboratories for chemical and histobacteriologic researches. In Vienna there is one specialist to each 1,800 inhabitants, and one practitioner to each thousand inhabitants, and a physician-dentist to each 3,000 inhabitants, or, on an average, one medical practitioner to each 520 inhabitants. Austria outside of Vienna presents entirely different conditions. With a population of about 4,500,000, the number of physicians increased, during the period 1927-1932, from 3,334 up to 3,542, or by 208 physicians, of whom 2,741 were practitioners, 455 specialists and 346 physician-dentists. Of this total number, 2,575 received fixed salaries from local

or municipal corporations. The proportion of physicians to inhabitants is as 1 to 1,315, but this proportion varies, with the position of the various sanitary districts, between 1:929 and 1:2,399. In the eastern provinces and in the mountainous provinces the population is sparse, and the percentage of physicians is low.

From these data, the conclusion is reached that in the republic of Austria it is hardly justifiable to speak of a surplus of physicians. There is, however, an unequal distribution of practicing physicians, since the preponderant metropolis, which has only 30 per cent of the population, has more than 50 per cent of the physicians. In this day of the small auto, the radio and graduate courses at the university, every physician can easily keep in touch with the progress of culture in the cities, and it is eminently desirable that more of the young physicians be induced to settle in the rural districts, which offer a fairly good opportunity for not only the general practitioner but also the specialist.

Demonstration of Tubercle Bacilli in the Blood

Prof. H. Busson of the Vienna serologic institute delivered recently an address before the Vienna Medical Society on his research on the demonstration of tubercle bacilli in the blood. Of 150 samples of blood from patients with clinically established tuberculosis, which he examined by cultivation, by inoculation into animals and in stained preparations, only 26, or 18 per cent, gave positive results. The methods of examination are not of equal value. In ten cases, inoculation into animals was positive, although cultivation gave negative results, and in two cases the reverse was true. Even patients with fever and severe progressive tuberculosis have not infrequently bacillus-free blood. Of twenty-nine patients with tuberculosis of the skin, 17 per cent were positive; twenty-one cases of polyarthritis with clinically manifest tuberculosis gave 43 per cent of positive results, cultivation and inoculation showing the same values. It was discovered later that in the positive cases the blood had been derived during the upward trend of the fever curve, and in all the negative cases during the downward trend of the curve. For the migration of bacilli into the blood several factors appear to be responsible, particularly the state of immunity. So long as immunity exists, the occasional entrance of bacilli into the blood appears to have no importance. Not until a "decompensation" occurs can the bacilli in the blood increase. Professor Busson does not think that the conception of certain authors in regard to the etiologic importance of tubercle bacilli for polyarthritis is well founded but rather that, in this disease, bacillemia is a chance condition. He holds, furthermore, that bacilli are for the most part eliminated from the blood stream by the kidneys.

Graduate Courses in Vienna

As in years past, the Vienna Faculty of Medicine is preparing this year again a number of postgraduate courses for graduate physicians of all countries. The courses cover twelve days of instruction, of from five to six hours a day, and are open to any physician on payment of the fee of 50 shillings, or about \$7, per person. Registrations should be addressed to the "Kursbureau," Dr. A. Kronfeld, Vienna, IX, Porzellangasse 22. The courses to be given in 1933 are: "Diseases of the Heart and Lung," February 13-26; "Laryngology, Rhinology and Otolaryngology," April 3-15, and "The Most Important Medical Questions of the Day, with Especial Reference to Treatment" (so-called rural physicians' course), September 25 to October 6. A further course on modern therapy, from November 27 to December 8, is being prepared. Each of these postgraduate courses is given by most competent representatives of the specialty concerned, and comprises theoretical, practical and demonstrative clinical and laboratory instruction.

JAPAN

(From Our Regular Correspondent)

Feb. 25, 1933.

Discussion About Cod Liver Oil

The administration of cod liver oil to undernourished school children has started a discussion between the school physicians and the dietetic laboratory, the chief of which is Dr. Sacki. In the upper house of parliament, Dr. E. Kanasugi, who is opposed to the administration of cod liver oil, told the minister of education that these children are given it without any previous careful medical examination. He was of the opinion that before any such medicine as cod liver oil is given to these children they should first be well nourished with wholesome food. He said that the free school lunch given to the poorer children at the expense of the state is quite doubtfully effective. A sum of money amounting to more than 2,000,000 yen was spent for free lunches last year.

Proposed Changes in Midwifery

The present law regulating midwives was made in 1899; since then there has not been any change, and yet medicine has made remarkable progress in the last thirty years. The proposed new law would raise the position of midwives and also license them to give hypodermic injections, make perineal repair and give injections in case of asphyxia of new-born babies. The midwife school should be raised to a higher status, taking in those who have finished the better girls' schools.

Death of Professor Miwa

Dr. Tokukan Miwa of Tokyo, professor emeritus of Chiba Medical University, died of pneumonia, February 19, aged 75. After graduating from Tokyo Imperial University Medical Department, he went to Germany to study surgery. On returning to Japan, he was appointed professor in Chiba Medical College and when this college became a university he became its first president. He devoted almost his whole life to medical education. He was also a good clinician and, indeed, the pioneer of surgery in this country. His "Surgical Therapeutics" and his "System of Surgery" were most valued books of fifteen volumes each. He retired from public life about ten years ago.

The Government and the Prevention of Tuberculosis

The committee of forty-eight persons of the board for the investigation of national hygiene convened under the presidency of Baron Yamamoto, the home minister, January 20. The government is reported to have decided on a national policy for the prevention of tuberculosis. The chief of the sanitary board of the home office said that the deaths reported as due to tuberculosis in 1930 numbered 119,635; that is, 18.56 deaths per 10,000 of population. The actual number must be still larger. Deaths from tuberculosis rank first in number. The number of cases may be roughly estimated as more than 1,200,000, or one case for each ten families. The annual expenditure by the government in combating it has been only 3,000,000 yen, but the home office is anxious to take up active measures at once. A special committee was appointed, numbering thirty-three, with Dr. Kanasugi, a member of parliament, as chairman. The special committee will meet every Tuesday for several months. At the first meeting reports from all sections were received. Dr. Takano, the chief of the prevention board in the home office, stated that it is planned to place a prevention expert in every local government, to establish a sanatorium for children, to build a special home for convalescents, to have a training center for prevention experts, to popularize the knowledge of prevention all over the country, and to establish compulsory reporting of cases.

Marriages

HERBERT SESSIONS WELLS, Nashville, Tenn., to Miss Salome Winckler of Madison, Wis., February 24.

MANFRED CALL, III, to Miss Mary Poppenheim Miller, both of Richmond, Va., February 3.

JAMES HUNT ROYSTER to Miss Louise Moss, both of Richmond, Va., February 22.

HOWARD E. SPAFFORD, Malta, Ill., to Miss Ila Baxter of DeKalb, March 4.

LOUIS Z. FISHMAN to Miss Julia Mittelman, both of Chicago, March 19.

Deaths

William Briggs Tatum ☉ Brooklyn; Medical Department of Emory University, Atlanta, Ga., 1916; member of the American Urological Association; fellow of the American College of Surgeons; formerly instructor in urology, Long Island College of Medicine; chief of the female and children's urologic clinic, Long Island College Hospital, the urologic clinic, Coney Island and Harbor hospitals, and the syphilis clinic, Brooklyn Eye and Ear Hospital; aged 39; was killed, March 2, when he jumped or fell from a third story window.

Martin William Reddan, Trenton, N. J.; Jefferson Medical College of Philadelphia, 1900; member of the Medical Society of New Jersey; fellow of the American College of Surgeons; served during the World War; medical director of St. Francis Hospital and the New Jersey State Prison Hospital; on the staff of St. Michael's Orphanage; aged 62; died, March 1, of cerebral embolism.

Joseph Paul Murphy, Brooklyn; College of Physicians and Surgeons in the City of New York, Columbia University, 1894; fellow of the American College of Surgeons; on the staffs of St. Mary's Hospital, Coney Island Hospital and Shore Road Hospital, Brooklyn, and St. Joseph's Hospital, Far Rockaway; aged 61; died, February 22, of heart disease.

William Franklin Temple, Boston; Harvard University Medical School, Boston, 1881; member of the Massachusetts Medical Society and the Associated Anesthetists of the United States and Canada; formerly on the staffs of St. Elizabeth's Hospital and the Carney Hospital; aged 79; died, February 2, in a local hospital, of arteriosclerosis.

Frank Amos Chapman ☉ Chicago; Marion-Sims College of Medicine, St. Louis, 1897; Rush Medical College, Chicago, 1914; assistant clinical professor of medicine, Rush Medical College; served during the World War; aged 56; on the staff of the Washington Boulevard Hospital, where he died, March 12, of uremia and nephritis.

Hilliard Wood ☉ Nashville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1885; fellow of the American College of Surgeons; formerly professor of diseases of the eye, ear, nose and throat at his alma mater; on the staff of St. Thomas Hospital; aged 67; died, February 23, of heart disease.

William James Wanless, Glendale, Calif.; Medical Department of the University of the City of New York, 1889; fellow of the American College of Surgeons; formerly a medical missionary in India; was knighted by King George V for his service to the Indian people; aged 67; died, March 3.

James Thomas Gammage, Pineview, Ga.; Southern Medical College, Atlanta, 1891; member of the Medical Association of Georgia; secretary of the Wilcox County Medical Society; aged 63; died, March 9, in Macon, of heart disease and pneumonia following an operation.

Marshall Doig MacNaught ☉ Walton, N. Y.; Baltimore Medical College, 1910; coroner; aged 49; died, March 8, in the Aurelia Osborn Fox Memorial Hospital, Oneonta, of an infection resulting from a slight wound from an instrument, incurred while treating a patient.

Daniel J. Wallace, Sparta, Mich.; University of Michigan Medical School, Ann Arbor, 1876; formerly village president, member of the village council, member of the board of education, and village and township health officer; aged 80; died, February 19, of heart disease.

Hartwell N. Lyon, St. Louis; College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College, 1890; fellow of the American College of Surgeons; aged 68; was found dead, March 1, of poison, presumably self administered.

James Purdy Roth ☉ Shenandoah, Pa.; Jefferson Medical College of Philadelphia, 1915; served during the World War; surgeon-in-chief of the Locust Mountain State Hospital; aged 41; died, February 28, in the Emergency Hospital, Washington, D. C., of pneumonia.

Neil Andrews, Oshkosh, Wis.; Northwestern University Medical School, Chicago, 1904; member of the State Medical Society of Wisconsin; fellow of the American College of Physicians; aged 63; died, March 7, of cerebral embolism and carcinoma of the bladder.

Sibley Holmes, Foley, Ala.; Medical College of Alabama, Mobile, 1895; member of the Medical Association of the State of Alabama; formerly member of the state legislature; mayor of Foley; aged 60; died, March 9, of a mastoid infection, following influenza.

Armistead L. Wellford, Richmond, Va.; Medical College of Virginia, Richmond, 1880; Medical Department of the University of the City of New York, 1882; member of the Medical Society of Virginia; aged 75; died, February 1, of carcinoma of the prostate.

Thomas L. Bowmar ☉ Brooklyn; New York Homeopathic Medical College and Flower Hospital, New York, 1915; on the staff of the Prospect Heights Hospital; aged 49; died, March 6, in the Methodist Episcopal Hospital, of a throat infection.

George Turner Horne ☉ Augusta, Ga.; University of Georgia Medical Department, Augusta, 1894; assistant professor of clinical gynecology at his alma mater; formerly member of the city council; aged 61; died, March 6, of heart disease.

Henry Allen Higley, Brooklyn; College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College, 1888; member of the Medical Society of the State of New York; aged 66; died, March 11, of heart disease.

Albert August, Cambridge, Mass.; Harvard University Medical School, Boston, 1892; member of the Massachusetts Medical Society; for many years on the staff of the Cambridge Hospital; aged 62; died, March 7, of cerebral hemorrhage.

Emanuel Oliver Benson, Chicago; Rush Medical College, Chicago, 1900; formerly assistant professor of pediatrics, University of Illinois College of Medicine; aged 62; died suddenly, March 22, of chronic myocarditis and acute dilatation of the heart.

Arthur V. Marquardt, St. Louis; St. Louis College of Physicians and Surgeons, 1905; member of the Missouri State Medical Association; aged 57; on the staff of the Deaconess Hospital, where he died, March 1, of cirrhosis of the liver.

Tilly Alexander Martin, St. Louis; Bellevue Hospital Medical College, New York, 1870; Confederate veteran; formerly professor of diseases of children, Barnes Medical College; aged 84; died, February 4, of carcinoma of the rectum.

G. A. H. Dufresne, Montreal, Que., Canada; School of Medicine and Surgery of Montreal, 1894; professor of physiology and clinical instructor in applied anatomy, University of Montreal Faculty of Dentistry; died suddenly, January 26.

William Wiley Walls, New Hope, Ala.; Birmingham Medical College, 1913; member of the Medical Association of the State of Alabama; aged 48; died, March 4, in the Highland Baptist Hospital, Birmingham, of agranulocytosis.

Edwin H. McKinney, Doylestown, Ohio; Ohio Medical University, Columbus, 1905; member of the Ohio State Medical Association; president of the Wayne County Medical Society; aged 55; died, March 2, of heart disease.

Amasa Day Chaffee, Chester, Conn.; College of Physicians and Surgeons in the City of New York, Columbia University, 1893; aged 62; died, February 27, in the William Wirt Winchester Hospital, West Haven, of heart disease.

Frank Elmore Thompson, San Angelo, Texas; University of Wooster Medical Department, Cleveland, 1896; member of the State Medical Association of Texas; aged 62; died, Dec. 29, 1932, of carcinoma of the small intestine.

William Golden Mortimer, New York; Medical Department of the University of the City of New York, 1885; member of the Medical Society of the State of New York; aged 79; died, March 3, of coronary thrombosis.

Benjamin Whitney Gleason, Manchester, N. H.; University of Pennsylvania School of Medicine, Philadelphia, 1901; served during the World War; aged 62; died, February 28, of diabetes mellitus and coronary thrombosis.

Samuel Horton Havice ☉ Fort Wayne, Ind.; Bellevue Hospital Medical College, New York, 1884; aged 73; died,

Julius Adler of New York; Baltimore University School of Medicine, 1898; aged 64; died, February 7, of influenza.

In addition to the so-called sanatorium, there was created the Jamun Company, which sold Jamun Compound as a "patent medicine." There was also opened the Loring Park Clinic, with Carl Beyer as its "managing director." This advertised a line of "patent medicines" known as the "Beyer Home Remedies," which would cure such widely different conditions as goiter, diabetes, kidney trouble and female weakness. There was also a preparation that was pushed rather extensively, sold as a "positive cure for gallstones." The Loring Park Clinic,

in addition to claiming to cure one's physical ailments, offered to help one's financial weakness by accepting the public's money in any number of units of \$100, for which "7 per cent gold notes" would be issued with "interest payable semi-annually" and "maturing in eighteen months from issuance."

In 1923 Carl Beyer was blatantly advertising in circulars two feet by one-and-a-half feet in size that his Loring Park Sanatorium was transplanting glands to cure diabetes and bring about "rejuvenation." At this point it may be mentioned that while Carl Beyer frequently describes himself as "Dr. Beyer," the man is not a graduate of any reputable medical school or licensed to practice medicine in any state.

In 1928 the Minnesota State Board of Medical Examiners pointed out that Carl Beyer was operating what was known as the Beyer's Clinic in Minneapolis and was using as a part of his advertising "come-on" a reproduction of an alleged diploma purported to have been issued to him by the "Physicians and Surgeons Institute of Endocrinology and Organotherapy." Of course, no scientific organization of any such name existed. Under "Minnesota News" published in THE JOURNAL, Feb. 13, 1932, it was reported that Carl Beyer had pleaded guilty to practicing healing without a basic science certificate and had been sentenced by Judge Reed of the district court to pay a fine of \$200 or serve sixty days in the Minneapolis workhouse. Of course he paid the fine.

THE GERMANIA TEA SCHEME

In the latter part of 1932 and the first few months of the present year Beyer has been pushing his Germania Tea Company. This company is reported to have for its president and treasurer one F. W. Hartman, for its secretary Carl Beyer, and for its vice-president Beyer's wife, Anna. The Germania Tea Company, it seems, was incorporated in 1927 as the Germania Novelty Company, a name that was changed in March, 1932, to Germania Tea Company. It is said to have succeeded in part to the business of the Loring Park Clinic Corporation, which was unsuccessful. The Germania Tea concern is supposed to put out a line of "teas" from 1 to 14. The "full line," as listed in the advertising, comprise the following:

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|--------------------------------|-----------------------------------|
| No. 1. Kidney and Bladder. | No. 8. Menstruation. |
| No. 2. Constipation. | No. 9. Diabetes. |
| No. 3. Liver and Gall-Bladder. | No. 10. Cough and Lung. |
| No. 4. Stomach. | No. 11. Piles. |
| No. 5. Herb Tonic. | No. 12. Nervousness. |
| No. 6. Rheumatism. | No. 13. Germania Elimination Tea. |
| No. 7. Blood. | No. 14. Germania Reducing Tea. |

Germania Reducing Tea seems to be the big seller and most heavily advertised at the present time. The advertisements, which appear in newspapers that are not above carrying advertisements of products of this type, feature one Margaret George, whose "before-and-after" pictures form part of the advertising. Furthermore, a woman who is said to be Margaret George seems to be used as a "demonstrator." A few months ago the Chicago Tribune carried the Germania Tea advertising at about the same time that the paper was conducting a so-called free "cooking school." At one of the meetings of the cooking school, the virtues of Germania Tea were described and the Margaret George person was introduced to the class.

In some of the advertising put out by the Germania Tea concern, the reader is told:

"In 1925 the Loring Park Clinic, through its founder, Dr. Beyer, was impressed by the wide-spread use of this Herb Tea among German medical men. He brought samples back to his own clinic and there tested 'Germania Reducing Herb Tea' on overweight patients. It met every test and achieved phenomenal results.

"At the end of this period of tests and trials it was decided to offer 'Germania Reducing Herb Tea' to the general public and not confine its benefits to patients of the Loring Park Clinic alone."

Two analyses have been made of Germania Tea, one by the State Board of Health of Kentucky and one by the American Medical Association. The Kentucky report on Germania Tea read as follows:

"The sample appears to consist principally of senna leaves with a small amount of Uva Ursi, Bluet (corn flower), calendula flowers, wild cherry, licorice, anise, fennel, stems that resemble shepherd's purse, and some unidentified leaf fragments."

The Kentucky analyst expressed the opinion that the ingredients of a \$1.50 package of Germania Tea were worth approxi-

mately 15 cents. The report from the A. M. A. Chemical Laboratory follows:

LABORATORY REPORT

"One original package of Germania Herb Tea (Germania Tea Company, 608 First Avenue North, Minneapolis, Minn.) was submitted to the A. M. A. Chemical Laboratory for examination. The package contained a mixture of herbs. A pharmacognostic examination indicated the presence of the following products:

Senna, in large proportion.

Corn Flower (Bluet, *Centaureum cyanus*), quite abundant.

Tea, apparently a dark Indian variety; Parfara (Coltsfoot, *Tussilago Farfara*); Calendula (*Calendula officinalis*) and Elder Flowers (*Sambucus* Flowers): each in rather small quantities.

Fennel, Anise, Uva Ursi, and Juniper: each in very small quantities.

"The pharmacognostic examination failed to reveal the presence of wild cherry, licorice, capsella (shepherd's purse), phenolphthalein or thyroid. From the pharmacognostic examination the product appears to be largely senna."

Obviously, from the analyses, the essential drug in Germania Herb Tea is senna. The other ingredients seem to vary with different packages. It is apparent that the physiologic effect of taking Germania Herb Tea will be that of taking senna. The recommendations are that this mixture be used three times a day. As every physician knows, senna is a drastic purgative and is especially contraindicated in spastic constipation and in conditions of intestinal inflammation. It is especially to be avoided by persons who suffer from hemorrhoids.

The persistent and indiscriminate use of purgatives as a means of reducing weight is not only irrational but dangerous. Whatever reduction may be brought about by such means is due to the fact that the food eaten is hurried through the intestinal tract before much of it can be properly assimilated. In other words, a certain amount of food is totally wasted, while at the same time the digestive apparatus—and especially the lower bowel—is subjected to constant and repeated physiologic insults by the purgative.

Correspondence

HOSPITAL COSTS IN HARD TIMES

To the Editor:—The popularity of the hospital, especially the voluntary hospital, with all classes of the community, is a sociological phenomenon characteristic of our own generation. Time was when people who were sick remained at home with their families and were content to be treated in a modest way, both financially and scientifically, by the practitioner and an occasional consultant, unless they were suffering from a condition which required the highly technical facilities of a hospital. In those days a woman would frown on the suggestion of her physician to go to a hospital for the purpose of having her baby, and he would find considerable difficulty in convincing her that it was for her good rather than for his convenience.

One would expect that with the increase in the number of patients congregated in wards of large hospitals there would be a corresponding reduction in the expenditure for their care but, even in hard times like these it costs almost \$40 a week to maintain such a patient in a good hospital. It might be wise to appraise the service responsible for the figures, to discover how much of this expenditure is due to necessities and how much to luxuries.

The management of the hospital household should not be a matter of great expense in itself, nor should the routine treatment which the patient requires in the form of necessary medical service, nursing service, food service and medication. In the course of the routine, however, certain by-products appear that are more or less necessary, and some of these find their way eventually into the regular budget of the hospital. This is true, among other things, of the special diagnostic and therapeutic laboratories, the educational program in all its phases, and the research program, all of which, if not controlled, may add considerably to the burden of upkeep.

Much has been said of late about the overproduction of hospital beds and their unequal distribution for communal purposes. It has indeed become the fashion to criticize the lavishness of hospital construction, though the critics were strangely silent during the prosperous era. These are, however, only a few factors that influence hospital costs. One may well admit that good money was needlessly spent for ornamental purposes when much less expensive and equally durable conveniences would have served the purpose, though it is doubtful whether this voluntary contribution could have been diverted in every case to other hospital uses. As far as scientific apparatus is concerned, there is scarcely a hospital that could be criticized on the score of lavish equipment; but that the equipment has been luxurious in many instances in those items that are classified under the heading "interior decoration," no one will question. In the matter of organization, some hospitals have a medical staff limited to their needs, while others (perhaps because their service is voluntary) multiply staff members to the point at which they are in each other's way and incur expenditure because they serve and have to be served both in personnel and in equipment.

Hospitals deserve no more criticism on the score of lavishness in raising per capita costs than any other activity which depends on money for its existence but, in hard times, we are driven to review practices that would be taken for granted in easier times. One should not draw hasty conclusions from a comparison of the expenditures of the voluntary hospital with the public hospital. The voluntary contributor has always been willing to provide certain additional forms of service in which he had his own special interest, while the taxpayer, through his political representatives, considered it his duty in most instances to provide routine care only.

There seems to be enough food for thought about hospital costs during hard times to justify a careful review of the subject by national and local hospital organizations, as well as by individual administrators for their own hospitals.

E. M. BLUESTONE, M.D., New York.

Director, Montefiore Hospital.

A CASE OF THOMSEN'S DISEASE

To the Editor:—The recent comprehensive review of the literature of myotonia congenita by Jelliffe and Ziegler (*THE JOURNAL*, February 25, p. 555) prompts me to describe a case, seen recently:

J. K., a white youth, aged 19, Roman Catholic, born in Syracuse, N. Y., whose parents and a sister, aged 21, are without neurologic or muscular anomalies, and whose family as far as ascertainable is similarly free from any relevant abnormalities, had a tonsillectomy at 7 and was believed to have had some evidence of muscular "stiffness" from infancy. It was recalled definitely that from the age of 4 he tended to stumble and to fall easily. As far back as he can remember he has stumbled if pushed even lightly, or if startled. He has always tended to lose his balance easily. About thirty seconds before he arises from a sitting or lying posture his muscles remain "stiffened." He has to start to leave a street car about two blocks before his destination. If he leans backward, he cannot regain his equilibrium, and he falls to the ground "in one piece." Whenever he sneezes, his eyelids cannot be opened for about thirty seconds. The same interval elapses before he can open his tightly clenched hands.

Cold weather and fatigue accentuate his difficulty in relaxing his muscles. He tires easily and his speech is slow, low and monotonous. Emotional expression is very difficult. All muscle groups seem involved. The general physical and neurologic examination is negative, except for the muscular handicap. There is the typical myotonic reaction in all muscle groups. He has a marked pseudohypertrophy of the muscles

of the thighs and calves. The blood pressure is 120 systolic, 80 diastolic. The blood Wassermann and routine urine examinations are negative.

His intelligence is normal: he finished the second year of high school at 16 and has been working steadily since as an errand boy in a newspaper office. He engages in the usual physical activities of a boy of his age with a fair degree of efficiency if he is extremely careful. His outlook on life thus far has been normal, except that he realizes that he must lag a little behind in the affairs of his world. His condition apparently in recent years has been stationary.

LOUIS J. BRAGMAN, M.D., Syracuse, N. Y.

HOSPITALIZATION AND THE COST OF MEDICAL CARE

To the Editor:—Two features of the high cost of medical care have been too much neglected in past discussions: unnecessary hospitalization of patients by physicians, and unduly high cost of hospital construction.

During the past two decades there has been a growing tendency to send patients into hospitals for study and treatment, usually involving extensive chemical and physical laboratory aids which have added much to the already high hospital costs. With diabetes, in particular, the cost of medical care has been rendered excessive by this unnecessary use of hospitals and laboratories. I say unnecessary here because I am convinced that, with a due regard for the patient's purse and a willingness to give a maximum of personal service, this and many other conditions could be handled largely at home or in the office as effectively as in the hospital. Physicians may have felt a responsibility toward financial support of our present expensive hospital set-up. Such financial burden, however, should be thrust on the patient only when necessary for his own good, and then only to a minimal extent. This brings up the next question, which concerns the cost of necessary hospital care.

Recognizing hospitals as essential aids in giving proper medical care, let us look into the expenditures involved and whether they are necessary and appropriately balanced with the cost of other vital activities of the patient. Increasing splendor and fineness in detail of construction and equipment has been the rule in hospitals of recent years. Costs per bed have kept mounting, until now \$4,000 represents close to the minimum, and from there the range is upward to \$10,000 a bed. What proportion of patients who use these beds are accustomed to any such cost in their home surroundings? In most countries the average family lives in a home with a value approximately double the annual family income. With the middle class of patients this would mean an income of from \$2,000 to \$5,000 and a home valued at \$4,000 to \$10,000, or, for a family of five, a home value of from \$800 to \$2,000 per bed. And then, when we ask these people to take a hospital bed, we offer them only beds five times as expensive as experience has shown they can afford at home. Is it any wonder most people regard hospitalization as a financial calamity?

People over the country, in the face of the present depression, are beginning to scan expenditures much more closely, and it is being realized that the same error has been made in our school buildings as is pointed out for the hospitals. There will soon be a realization of the utter fallacy of expenditures along these lines so out of proportion with what people can afford at home; for, in the end, the people must pay the bill. I believe the medical profession could best help out in the present problem of medical costs by seeing that hospital construction and upkeep costs be reduced to somewhere near the financial level of the people to be treated, and then by imposing this burden on patients only when necessary for the patients' good. This will involve efforts toward more treatment in the

home, but perhaps we might thus retrace in part the path back to the old-time family physician.

With the likelihood of construction of numerous small community hospitals over the country in the near future, it is essential that the principles of cost set forth should be kept to the fore. By making use of construction materials and methods now available, hospitals fully adequate for every needful purpose can be built and equipped for \$2,500 or less per bed, so insulated from external changes in environment as to have low heating and upkeep costs. With such economy in construction, it should be possible to air-condition every hospital completely, particularly to avoid the deleterious effects of severe summer heat waves. Construction architects are now prepared to plan such adequate, completely equipped, air-conditioned, acoustically treated hospitals for around \$2,500 per bed. Is it not the duty of the medical profession to see that all future hospital or clinic construction be carried out along these new lines, so as to relieve the public of this one unnecessarily large item in the cost of medical care?

C. A. MILLS, M.D., Cincinnati.

"DENTAL EDUCATION IN THE UNITED STATES"

To the Editor:—In THE JOURNAL, April 23, 1932, page 1498 appeared a review of a pamphlet entitled *Some Phases of Dental Education in the United States*, by Alfred Owre, dean of the Columbia University School of Dental and Oral Surgery. The pamphlet is notable as one of the most inaccurate and misleading publications ever issued in the name of dentistry. Your reviewer "fell for" its most unjust implications. It is untrue, for example, that obstacles have been thrown in the way of any dental educational program at Columbia, and the Dental Educational Council has been squarely behind the movement that eliminated all the proprietary dental schools. Several are still independent, like Jefferson Medical College.

I called attention, in the issue of the *Journal of Dental Research* for October, 1932, to some of Dr. Owre's misrepresentations, in the pamphlet, of the Carnegie Foundation's study of dental education. The president of the Dental Educational Council, Dr. H. L. Banzhaf of Marquette University, in an address published in the issue of the *Journal of Dental Research* for December, 1932, referred to some of Dr. Owre's misrepresentations of the Dental Educational Council.

Dr. Owre was the only dentist in the group of seven sponsors of the footnote, on pages 112-113 of the majority report of the Committee on the Costs of Medical Care, which misrepresents conditions in dental practice, and which was corrected on pages 81-98 of the February issue of the *Journal of Dental Research*.

WILLIAM J. GIES, PH.D., New York.

Editor, *Journal of Dental Research*.

"CYSTINE NEPHROLITHIASIS"

To the Editor:—In THE JOURNAL, Dec. 24, 1932, appeared an interesting article entitled "Cystine Nephrolithiasis," by George H. Ewell, M.D. Attention should, however, be directed to the following misstatements in Dr. Ewell's communication:

1. "Chemically, cystine is a complex organic compound and belongs in the amino-acid group, the only one that contains sulphur, the latter being about 25 per cent of its content."

2. "Feeding experiments on dogs and rats have shown that [cystine] is an essential amino-acid necessary for growth and maintenance of body weight, and no other substance can replace it."

3. "The chemical formula of cystine is $[S.CH_2CH(NH_2).COOH]_2$ and by oxidation is broken up into two molecules of

cystinic acid; these substances are stored in the body tissue and play a great rôle in oxidation processes."

Cystine is not the only sulphur-containing amino-acid found in proteins; methionine also contains sulphur. Furthermore, the latter amino-acid is apparently capable under certain experimental conditions of replacing cystine in the diet (Jackson, R. W., and Block, R. J.: *Science* 74:414 [Oct. 23] 1931; *J. Biol. Chem.* 98:465 [Nov.] 1932. Weichselbaum, T. E.; Weichselbaum, M. B., and Stewart, C. P.: *Nature* 129:795, 1932).

The chemical formula for cystine is $(-S.CH_2CH(NH_2).COOH)_2$. In vitro oxidation of cystine yields two molecules of cysteic acid, sometimes called cysteinic acid in the older literature. We are not aware of any experimental evidence supporting the statement that cysteic acid plays "a great rôle in oxidation processes" in the body tissue.

Again, Dr. Ewell writes: "In hair and wool the content [of cystine] varies between 5 and 10 per cent." And also, "All proteins contain some cystine in variable amounts."

The cystine content of wool and hair keratins stated as being within the range of 5 to 10 per cent is none too high. Several investigators (for example, Wilson, R. H., and Lewis, H. B.: *J. Biol. Chem.* 73:543 [June] 1927. Rimington, C.: *Biochem. J.* 23:41, 1929) have reported analyses indicating figures ranging from 10 to 20 per cent.

Finally, in view of the limited evidence as yet available, the conclusion that "all proteins contain some cystine" seems somewhat hazardous.

ABRAHAM WHITE, PH.D.,

RICHARD W. JACKSON, PH.D.,

New Haven, Conn.

Laboratory of Physiological
Chemistry, Yale University.

[The foregoing letter was referred to Dr. Ewell, who replies:]

To the Editor:—The writers' exceptions are well taken. These discrepancies had, however, been previously called to my attention by Dr. Harry D. Baernstein of the University of Wisconsin Medical School.

Concerning the amino-acid methionine, several of the standard textbooks of physiologic chemistry, unless revised in very recent years, contain little if any reference to this substance. The 1930 edition of Mathews' *Physiological Chemistry* does not list it in the tabulation of percentage of amino-acids isolated from various proteins, page 136. That this substance may play an important part in cystinuria remains to be determined, and Dr. H. B. Lewis of the University of Michigan has been kind enough to suggest that I employ methionine in some experimental manner in the further studies that I am pursuing. The incorrect formula in my paper should not, of course, have been overlooked in the proofreading.

Concerning the question as to whether or not methionine may replace cystine in the diet, the article by Jackson and Block appeared in November, whereas my paper was presented in May at the annual session and obviously no reference could have been made to this article. The same is true of the article of Weichselbaum et al.

A hurried review of the article of Jackson and Block would indicate that methionine apparently is capable, under certain experimental conditions, of replacing cystine in the diet and then only in part, if my interpretation of the article is correct; at the present time, from the standpoint of a clinician, it would seem that cystine is still an essential amino-acid necessary for growth and maintenance of body weight.

Since the publication of my paper, Dr. Baernstein has succeeded in demonstrating cystine in the urine of the mother of the boy J. H., referred to as case 2 in my article. In the

article I stated that specimens of urine from both the father and mother did not reveal cystine. I believe this observation is one of distinct importance in view of the familial tendency shown by the disease.

G. H. EWELL, M.D., Madison, Wis.

STYLET FOR URETERAL CATHETERS AND PLUGS FOR URETHRAL CATHETERS

To the Editor:—For over twenty years, during which time I have watched catheters buckle for others and heard the operators begging for specially made stylets, I have gone on quietly with my own unpatented secret. I advise employment of steel guitar strings, unwrapped, and known as the second treble string, or B. They cost 15 cents. They may be cut off at the proper length. Care in cleansing, drying and oiling will keep them for months. This will serve as a wonderful splint to male ureteral catheters and greatly facilitate their introduction.

I recommend as a catheter plug a golf tee of one-half inch top graduated down for one and five-eighths inches. The tees can be boiled, are obtainable in almost any color—though red seems appropriate—and will plug Pezzer catheters to number 36 French down to the smallest one any transurethral resectionist may desire to insert.

The depression price is 10 cents per dozen, but a lower rate is to be had in gross lots.

GIDEON TIMBERLAKE, M.D., St. Petersburg, Fla.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FEVER OF UNKNOWN ORIGIN IN CHILDREN

To the Editor:—In March, a girl, aged 6, complained of a sore throat and had a temperature up to 100 F. for about one week. One month later she had a sharp pain in the right thigh and commenced to have a slight fever, ranging from 98.8 in the morning to 100 or slightly over at night. This continued for a few weeks and a slight mitral murmur made its appearance. Tonsillectomy was done at this time and the child was put to bed for about three months, but the elevation of temperature continued. At that time the child was allowed up with little walking and no exercise. In spite of this restraint the temperature at night still approaches 100, and any excitement will send it a bit over that. The child is happy and has no symptoms. She weighs 62 pounds (28 Kg.) and shows no evidence of anemia. Her pulse has remained around 100, with slight increases with activity. I believe the child should be in bed but have found others holding that the slight amount of activity of the child will not affect her. The murmur does not seem to be any worse than it was at the beginning. There is no cyanosis, shortness of breath or cardiac enlargement. What is your opinion in regard to this case? Have you any suggestions? Kindly omit name. M.D., New York.

ANSWER:—A slight continuous elevation of temperature may not infrequently be encountered in infants and young children, and the correct interpretation of this temperature elevation may be puzzling, as in the case in question.

The first step to be taken when such a chronic elevation of temperature as habitual hyperthermia is encountered is to rule out all possible foci of infection. Among such foci one should not overlook occult tuberculosis, chronic catarrhs or inflammation of the nasopharynx and gums, ear infection, sinusitis, pyelitis, sepsis, lymphogranuloma and chronic endocarditis. A postinfectious hyperthermia following scarlet fever, measles, grip and pneumonia may last for weeks or months. In the case in question, a slight cardiac murmur with no cardiac enlargement is the only physical sign mentioned that might lead to investigation of a possible focus of infection. Functional murmurs are so common in children of this age that no weight should be placed on the finding of the murmur alone, without other signs, such as cardiac enlargement, fatigue or dyspnea.

If all other foci could be excluded through a careful physical examination, if the general deportment and reactions of the child were normal, and if such laboratory aids as a complete hematologic examination, urine and stool tests, tuberculin reac-

tion, and roentgen examination of the nasal sinuses, lung fields and heart diameters were all found to be within normal range, one would be led to exclude a hyperthermia of infectious or postinfectious origin.

However, there are other causes for habitual hyperthermia in infants and young children: It is known that constant over-feeding may cause a hyperthermia due to the specific dynamic action of excessive protein feeding. Such external factors as hot weather, increased humidity and warm clothing, or a warm bath may cause a rise in body temperature, and in infancy excessive thirst or excessive intake of salt or protein may produce fever.

As the result of muscular activity, especially of the lower limbs, there may be a rise in the rectal temperature from local heat liberated by muscular work. Further, children of a vasolabile constitution, as well as neuropathic and hyperthyroid children, may show hyperthermia.

The temperature curve and the comparison of axillary with rectal temperatures may often aid in differentiating elevations in temperature due to infection from those of other causes, such as activity and constitution. Temperature due to infection would be general, while in noninfectious hyperthermias the axillary temperature tends to be normal and the rectal temperature elevated. An hour of complete rest before the temperature is taken will exclude fever due to muscular activity. Neuropathic children often show greater elevations of temperature after exercise than do normal children.

If the child in the case referred to can be shown to be free of infection, no restrictions as to her activity will be necessary.

EFFECTS OF BEER DRINKING ON BODY WEIGHT

To the Editor:—A recent newspaper item warned women that daily consumption of beer is fattening. Will you kindly advise me whether, in your opinion, there is any scientific basis for this statement? M. P.

ANSWER:—Obviously, if beer contains 3.2 per cent of alcohol having a calory value of 7 per gram, and 10 per cent of nitrogenous and carbohydrate extractive materials having a calory value approximating that of sugars, protein and dextrin, i. e., 4 per gram—and assuming that these "extractive materials" present in beer are utilized in metabolism—a quart of beer will have a value of at least 500 calories. This is five sixths of the calory value of a quart of milk. One need only ask oneself what the effect of adding 500 calories a day to the diet of a sedentary person already ingesting a ration of liberal food-fuel value would be, to answer the question. It is impossible to answer the inquiry more intelligently without knowing what is meant by "the daily consumption of beer," and whether beer is considered as replacing or supplementing any part of the daily food allowance. Experience shows that usually it is a supplement to an already adequate ration.

USE OF ANTIPNEUMOCOCCIC SERUM

To the Editor:—On all sides one sees antipneumococcic serum, Felton, type I, being advertised by makers of pharmaceuticals. It is difficult to determine the type of pneumococcus in a given case. I know of no method except the mouse method, which takes a laboratory and twenty-four hours of time and leaves us country doctors with no easy way of determining type. Is it harmless to use this serum in all early pneumonias regardless of type? Is there any other better way of typing? In fact, what seems to be the best procedure when pneumonia of unknown type occurs in private homes in smaller towns? Should one use this serum? CARROLL H. BROWNING, M.D., Painesville, Ohio.

ANSWER:—The mouse method of typing pneumonia sputum is the most accurate, but where this method is not available, the Krumwiede method is easy to perform, fairly reliable, and, if positive, gives a satisfactory reading within one hour after the test is set up. In a statistical study of type II pneumonia, Cecil and Plummer found that 43 per cent of cases could be accurately typed by the Krumwiede method in less than one hour. Presumably this figure would hold for other types as well. Heffron and Varley have recently published an article on methods of pneumococcus typing and report good results with the Krumwiede method. The Sabin method of typing is also rapid and accurate but necessitates the use of a mouse. Results are usually obtained within five hours.

The question of whether or not antipneumococcic serum should be employed in cases in which the type is not known is still a subject for debate. Some authorities advise the prompt administration of serum in typical lobar pneumonia before the type has been determined. Others consider it better practice to withhold serum until the type has been discovered and employ it only in type I, and possibly type II, cases. All agree that serum is useless in type III and group IV infections. Perhaps it is safer not to lay down any hard and fast rule on this

question. In severe infections, with all the signs of toxemia present, serum would be indicated without waiting for the type. In mild infections the practitioner would certainly be justified in following a more conservative course.

The methods mentioned are explained in the following articles:

Krumwiede, Charles, Jr., and Noble, W. C.: A Rapid Method for the Production of Precipitin Antigen from Bacteria: An Attempt to Apply It to the Determination of the Type of Pneumococcus in Sputum, *J. Immunol.* 3:1 (Jan.) 1918.
Cecil, R. L., and Plummer, Norman: Pneumococcus Type II Pneumonia: A Clinical and Bacteriologic Study of One Thousand Cases, with Especial Reference to Serum Therapy, *THE JOURNAL*, March 5, 1932, p. 779.
Heffron, Roderick, and Varley, F. M.: A Study of Lobar Pneumonia in Massachusetts: Methods and Results of Pneumococcus Type Determination, *Am. J. Pub. Health* 22:1230 (Dec.) 1932.
Sahin, A. B.: The Microscopic Agglutination Test in Pneumonia: Its Application to Rapid Typing and Control of Serum Therapy, *J. Infect. Dis.* 46: 469 (June) 1930.

MILD SILVER PROTEIN

To the Editor:—For my information, will you kindly compare the therapeutic values of the following mild silver protein preparations: Argyrol, A. C. Barnes Company; Solargentum, Squibb; Silver Nucleinate, Merck. Can the three be differentiated chemically or physically? I am trying to interest some of our local physicians in prescribing the above under its U. S. P. title "Argento-Proteinum Mite," and the requested information will be of considerable assistance.

M. W. DOYLE, JR., Torrington, Conn.

ANSWER.—Four brands of mild silver protein, U. S. P., are listed in New and Nonofficial Remedies:

- Argyn—Abbott Laboratories.
- Cargentos—Sharp & Dohme.
- Silvol—Parke, Davis & Co.
- Solargentum—E. R. Squibb & Sons.

Silver Nucleinate-Merck is a brand of mild silver protein, U. S. P. It has not been submitted to the Council on Pharmacy and Chemistry for acceptance. Several years ago the Council and the Laboratory pointed out that the so-called silver nucleinates were not nucleinates.

Argyrol conforms to the U. S. P. X tests for mild silver protein. Formerly it was accepted and described in New and Nonofficial Remedies, but it was omitted in 1928 because of nonconformance with the rules of the Council on Pharmacy and Chemistry (*THE JOURNAL*, March 17, 1928, p. 849).

It may be assumed that all six of the substances conform to the tests for mild silver protein, U. S. P. X. This does not mean that the substances are identical, because they are made from different protein materials. It does mean, however, that these substances in solution have essentially the same concentration of ionized silver and the same amount of nonionized silver. Therapeutically, they act similarly.

Pilcher and Sollmann point out (*J. Lab. & Clin. Med.* 8:301 [Feb.] 1923) that the differences between the different samples of the same brand are as great as or greater than the differences between the different brands with the substances they tested. The substances cannot be differentiated by the distinctive yeast test or by quantitative determinations of silver, but they can be differentiated by their physical appearance in the dry state. Other tests more or less vague have been worked out in some cases to differentiate between solutions of the various brands of mild silver protein.

EFFECTS OF SPLENECTOMY

To the Editor:—A patient has had his spleen removed after a blow that ruptured it. Under these circumstances, will the life of the patient be shortened? Will it impair his ability to engage in active manual labor? What is the relation generally between the function of the spleen and mechanical work? Please omit name.

M.D.

ANSWER.—If the patient had a normal spleen at the time of rupture and there was then no evidence of blood dyscrasia, the cases reported in the literature and the experience of physicians and surgeons indicate that length of life would not be shortened nor the ability to engage in active manual labor impaired. If some blood dyscrasia or some disease associated with splenomegaly was present at the time of the injury, the patient's subsequent course would be that of the disease as it might be modified by splenectomy.

Important functions of the normal spleen are those of blood destruction and of temporary compensation for sudden loss of blood. The function of blood destruction ordinarily is not affected by splenectomy, because other portions of the reticulo-endothelial system are likewise active in blood destruction. Theoretically, after the removal of a normal spleen, a favorable temporary reaction following sudden loss of blood would be less prompt, as the spleen acts as a reservoir for red cells and extrudes them into the circulation when they are needed. From

a practical standpoint, this loss of function could be quickly compensated for by transfusion.

Nothing is definitely known concerning the relationship of the spleen to mechanical work. The ancient Greeks believed that splenectomized runners were able to develop greater speed, and experimental work has been published which indicates that the speed of animals is greater after splenectomy; the proper evaluation of these statements, however, is impossible at the present time. There seems to be little relationship between the functions of the spleen and the ability to do mechanical work.

CRITICISM OF PRESCRIPTION FOR COUGH

To the Editor:—I have been experimenting with a formula to be used to allay the irritating dry cough that has become so prevalent as a complication of infections of the upper respiratory tract and wish you would give me your opinion as to the wisdom of the following prescription to be used in these cases:

Thymol	0.025%
Ephedrine hydrochloride	0.05%
Potassium guaiacolsulphonate	1.00%
Ammonium chloride	3.00%
Menthol	0.04%
Sugar	60.00%
Water	36.00%

Please omit name.

M.D., Minnesota.

ANSWER.—Assuming that the dose of the solution is a teaspoonful, it becomes evident that the dose of the ephedrine is too small to be of much value, unless this prescription is intended for a child. It is also clear that no effect could be expected from the minute amount of thymol, excepting the introduction of its unpleasant taste. The dose of the ammonium chloride, probably the essential ingredient of this prescription, might be increased, at least doubled; and it had better be dissolved in syrup instead of troubling the pharmacist to make the syrup extemporaneously by dissolving the sugar in the water. The menthol, which would probably best be dissolved in a few drops of alcohol before incorporating it in the aqueous fluid, would serve as a flavoring and, by its benumbing quality, disguising agent for the ammonium chloride. The value of the potassium guaiacolsulphonate as an expectorant is still *sub judice*. It probably does not represent the expectorant effect of guaiacol and creosote. If it did, it probably would not be rational to combine the ammonium chloride, which is intended to increase the bulk and fluidity expectoration, with the aromatic expectorant, which is believed to lessen the bulk of expectoration, possibly making it more tenacious and therefore contraindicated in just those cases in which ammonium chloride would be indicated.

TOXIC ARTHRITIS IN ALCOHOLIC INDIVIDUAL

To the Editor:—A woman, aged 34, married, without children but with one toxic pregnancy at 24, gave a history of alcoholism for the past ten years. The Wassermann reaction, blood, urine sedimentation test, basal metabolism, blood counts and culture were all negative. The physical, mental and gynecologic examinations were negative. She went to bed feeling well and awoke the next morning with a marked swelling and painful shoulder and left arm. The swelling and pain gradually left the arm and went to the forearm and finally to the fingers. At that time she was treated for possible erysipelas, owing to the presence of a slight abrasion and a few blebs. A possibility of a nerve pressure paralysis was also kept in mind. She was treated by all known means of medication, electrotherapy, hydrotherapy, baking and massage. At the present time her index, middle and ring fingers are slightly swollen, painful and tender and she holds things fairly well, yet her grasp is still weak. I have convinced myself that she is suffering from a polyneuritis (alcoholic) and have given her foreign protein as well as vaccine injections. Roentgenograms are negative. 1. Will she regain her normal grasp in these fingers in time to come? 2. Will the partial paralysis be permanent? 3. What should I tell the patient concerning the prognosis? 4. Should I try alcoholic injections into the ulnar and radial nerves? The patient is back at work and cannot afford to stay away any longer, as she was away for three months. 5. Kindly advise as to further treatment.

M.D., New York.

ANSWER.—This case may be one of toxic arthritis occurring in an alcoholic individual. The most important factors in this case would be the regaining of tonicity of muscle. In answer to the specific questions,

1. She should regain fairly normal grasp in these fingers eventually. Complete return may occur, provided the original cause is eliminated and contractures are prevented or corrected.
2. The partial paralysis should not be permanent.
3. The prognosis, while guarded, should be good if the toxic cause is completely eliminated and if treatment is adequate.
4. No. Alcoholic injections are contraindicated because of the danger of superimposing additional toxic effects.
5. In addition, absolute withdrawal of alcohol in any form, even in medication, is indicated. The extremities should be splinted in order to obtain rest and to prevent deformities or

contraction. If the patient is not overweight, a diet containing increased quantities of fats such as milk, eggs and butter is advisable. Strychnine should be of value. Electrical stimulation should be tried, and, unless it produces much pain, would probably be beneficial. Radiant heat, gentle massage and muscular movements, both active and passive, should be started as soon as the acute pain and swelling subside. They should be continued until the end-result is obtained.

HAIRY TONGUE

To the Editor:—A farmer, aged 63, consulted me for information concerning a localized growth of fine hairs, about 0.5 cm. long, on the dorsum of the tongue. The growth at present is the size of a fifty-cent piece (about 30 mm. across), painless, nonulcerating, not infected and not physically disturbing to the patient. There is no difficulty in swallowing foods of any kind. The growth has been noticed for the last three months and is receding in size. About one month ago the mass of hair extended from the posterior portion of the tongue along the midline to the very free margin. The hairs are easily removed with a tongue depressor. Occasionally the mass of hair becomes adherent to the palate, but it is easily separated by motions of deglutition. There is no history of trauma or burn. Can you give me any data on this case?

S. M. Lazow, M.D., Matawan, N. J.

ANSWER.—Hairy tongue is a rare anomaly, thought by Heidingsfeld, who studied it, to be hereditary in origin. He also thought that there is a pseudo-black tongue that is caused by local irritation. All forms are innocent, most cases clearing spontaneously after a time, as the one described seems to be doing. Any mild antiseptic application may be used. Five per cent solution of gentian violet has been successful in some cases. This may be painted on once a day after drying the surface as well as possible. An article by Dr. M. L. Heidingsfeld, entitled Hairy or Black Tongue, appeared in *THE JOURNAL*, Dec. 17, 1910, p. 2117.

MARRIAGE IN CRETINISM

To the Editor:—What advice regarding marriage should be given to a 19 year old girl who is a cretin of the congenital sporadic type? She enjoys good health, except that she takes cold easily and has frequent attacks of cystitis. Her height is about 5 feet (152 cm.) and she weighs 120 pounds (54 Kg.). She is maintained on 4 grains (0.25 Gm.) of desiccated thyroid daily. She is completing her last year in high school and is ordinarily an average pupil. There is no history of cretinism in the family.

M.D., Ohio.

ANSWER.—Cretinism does not seem to be transmitted to subsequent generations, and the few references in the literature to this subject would seem to confirm the foregoing statement. Goitrous families have a larger proportion of cretinoid children than normal families.

During pregnancy, this patient might need less thyroid when the fetal thyroid begins to assume its function. Occasionally it supplies the mother.

In this particular case, marriage need not be forbidden and probably pregnancy should be allowed.

LATE ULNAR NERVE PALSY

To the Editor:—I have a patient, aged 55, who seventeen years ago suffered a compound comminuted fracture by falling on his right elbow. Three months ago, while mowing a lawn, he felt a sudden pain in the upper third of the right forearm in the middle of the volar surface, which lasted about one hour. Occasionally he has pain in the same region. Two months ago he began noticing numbness of his right little finger and an awkwardness in using his right hand. The changes noted are essentially restricted to the right forearm and consist of a sensory loss to pain and touch over the little finger and ulnar aspect of the ring finger extending up to the wrist. Motor loss consists of an inability to flex the distal phalangeal joint and the proximal phalangeal joint of the little and ring fingers, loss of adduction in all the fingers, and loss of abduction in all the fingers except the little finger. Adduction of the thumb and wrist is maintained. There is good supination, pronation and flexion of the forearm but an inability to extend it beyond 160 degrees. On pressure over the ulnar nerve at the elbow between the external condyle and the olecranon, pain is felt. Has this any significance? Roentgen examination reveals the old fracture of the upper third of the radius and ulna, including the olecranon, but there is no evidence of callous formation around the medial condyle. Roentgen examination of the ribs and spine is negative. The other hand is normal. The condition is progressing. Is it most probable that it is compression of the ulnar nerve due to the injury of seventeen years ago? What other examinations should be done before this diagnosis can be made? What else would cause these symptoms and signs? Please omit name and address.

M.D., Montana.

ANSWER.—The history and symptoms detailed are typical of late ulnar nerve palsy, which not infrequently develops in adult life following a fracture in the region of the elbow joint sustained years before. The nerve palsy is due to gradual stretching of the ulnar nerve as it passes through the olecranon

groove over the posteromedial surface of the elbow joint. The stretching is due to the fact that, as the angle increases, the distance through which the nerve passes is increased, just as a man's coat sleeve is stretched over the back of the arm when he flexes the arm at the elbow.

The treatment of the condition is careful transposition of the ulnar nerve from behind the olecranon groove to the front of the elbow before nerve degeneration takes place. Such transposition shortens the course over which the ulnar nerve travels and so relieves the tension. A well written paper on this subject by Edwin M. Miller appeared in *Surgery, Gynecology and Obstetrics*, in January, 1924, volume 38, page 37.

LIVER FUNCTION TESTS IN PREGNANCY

To the Editor:—According to the directions for the Rosenthal modification of the bromsulphalein test of liver function, the amount of dye injected intravenously is 5 mg. for each kilogram of body weight. In other words, the dose varies with the weight of the individual. I should like to know whether this dose calculation holds true for the female in the late months of pregnancy. Please omit name. M.D., New York.

ANSWER.—The calculation of the amount of bromsulphalein retained in the blood from determinations done on a small sample of blood serum depends on the assumption that all the dye that has not been taken up by the liver is more or less equally distributed throughout the blood and tissue fluids. The color standards are prepared in such a manner that if no dye whatever was taken up by the liver and the total dye injected was equally distributed throughout the body fluids, the reading from the blood serum sample would be 100 per cent. It is obvious that the amount of dye present in any given sample of blood serum depends on the amount of dye injected and the total amount of fluid in which the dye is distributed. In order to be able to use the same set of color standards for all sizes of patients, it is therefore necessary to vary the amount of dye injected according to the bulk of the individual.

In the absence of evidence that the placenta in a pregnant woman prevents the passage of dye into the fetus and related structures, the latter must be considered as integral parts of the individual as far as this test is concerned. The usual dose calculation should therefore also be applied to pregnant women. J. M. Freiheit (*Am. J. Obst. & Gynec.* 23:797 [June] 1932) reports normal readings with the bromsulphalein test in uncomplicated pregnancy when the dose of dye was calculated on the total weight of the individual.

"PREDETERMINATION OF SEX"

To the Editor:—I am in accord with the recent discussion in *Queries and Minor Notes* (*THE JOURNAL*, February 18, p. 519) as far as concerns the skepticism expressed as to the predetermination of sex by alkalization or acidification. But the statement that "the extra chromosome theory of the production of sex seems to have the best scientific foundation" is open to comment—and more skepticism. Sex is a physiologic condition. Prof. John H. Schaffner of the Ohio State University made an interesting experiment with *Arisaema triphyllum*, jack-in-the-pulpit. This plant is dioecious, unisexual, with two kinds of flowers on separate plants. He selected a specimen of twins, however, which are occasionally found, and, as is invariably the case, both were female; identical twins, of course. By trimming the leaves and otherwise starving it he produced next year from the same plant a male and a female flower. He had changed the sex of one of them. Now will some cocksure geneticist kindly step forward and explain how it comes that sex was changed without any possible chance of chromosomes having a hand in the matter? The theory fails. Sex is not determined by chromosomes.

Observe a supersaturated solution of crystalline material. A foreign substance is introduced. Out of shapelessness and chaos, a semblance of order is established instantly. Now, sex is one of the conditions of life—a physiologic condition. Predetermination of sex is a vast subject. It involves knowledge which at present is not thoroughly understood by any one. Of one thing, however, we can be certain; anything we may do in the early stages of life is bound to be in the nature of clumsy, bungling experiment.

R. D. Book, M.D., Corning, Ohio.

"UNILATERAL NASAL DISCHARGE"

To the Editor:—With regard to the discussion of unilateral nasal discharge (*THE JOURNAL*, March 4, p. 687), every rhinologist would agree that the first thing to think of in this type of case is a foreign body. However, so many foreign bodies are found in the nose which are not roentgen opaque that I fear the sentence "Roentgenograms of the nasal cavities should be made carefully in the effort to decide definitely whether a foreign body of any sort is present which produces a constant irritation" may be interpreted to mean that the court of last resort in determining the presence of a foreign body in the nose is a roentgenogram.

It is my opinion that the person who answered this query would have done well had he advocated careful inspection of the interior of the nose both before and after the use of 1:1,000 epinephrine solution. It has been my experience that this is a much more satisfactory final method of search for foreign bodies in the nose than is the roentgenogram.

G. HENRY MUNDT, M.D., Chicago.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Milwaukee, June 12. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The general oral, clinical and pathological examination will be held in Milwaukee, June 13. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Milwaukee, June 12. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARKANSAS: *Basic Science*. Little Rock, May 1. Sec., Mr. Louis E. Gebauer, 1002 Donohue Bldg., Little Rock. *Regular*. Little Rock, May 9-10. Sec., Dr. Sam J. Allbright, Box 54, Searcy. *Eclectic*. Little Rock, May 9. Sec., Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith. *Homeopathic*. Little Rock, May 9. Sec., Dr. Allison A. Pringle, Eureka Springs.

CALIFORNIA: *Reciprocity*. Los Angeles, April 19. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

MINNESOTA: Minneapolis, April 18-20. Sec., Dr. E. J. Engberg, 350 St. Peter St., St. Paul.

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II*. The examinations will be held at centers where there are five or more candidates, May 8-10, June 26-28, and Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: *Basic Science*. Omaha, May 2-3. Dir., Mrs. Clark Perkins, State House, Lincoln.

NEVADA: Carson City, May 1. Sec., Dr. Edward E. Hamer, Carson City.

WISCONSIN: *Basic Science*. Milwaukee, June 17. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. *Regular*. Milwaukee, June 27-29. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.

New Jersey October Report

Dr. James J. McGuire, secretary, State Board of Medical Examiners of New Jersey, reports the written examination held in Trenton, Oct. 18-19, 1932. The examination covered 9 subjects and included 90 questions. An average of 75 per cent was required to pass. Thirty-four candidates were examined, 29 of whom passed and 5 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Georgetown University School of Medicine....(1930)	85.3,	(1931)	79.5
George Washington University School of Med....(1931)	83.4, 85.2,	88.1	
Loyola University School of Medicine....(1932)	84.7, 85,	86	
Northwestern University Medical School....(1932)		85.1	
University of Louisville School of Medicine....(1931)		81.8	
St. Louis University School of Medicine....(1931)		83.5	
Columbia University College of Phys. and Surgs....(1931)		83.6	
Cornell University Medical College....(1931)	78.3,	85.3	
Long Island College of Medicine....(1931)		86.5	
New York Homeopathic Med. Coll. and Flower Hosp....(1931)		85.1	
University and Bellevue Hospital Medical College....(1931)		86.2	
Hahnemann Medical College and Hosp. of Philadelphia....(1931)		88.2	
Jefferson Medical College of Philadelphia....(1931)		89.2	
Temple University School of Medicine....(1931)		81	
University of Pennsylvania School of Medicine....(1931)		83.4	
University of Wisconsin Medical School....(1931)		82.1	
Dalhousie University Faculty of Medicine....(1932)	77.3,	83.5	
McGill University Faculty of Medicine....(1931)		86.2	
Lékařské Fakulty Karlový University, Cze....(1931)		75.1	
Regia Università di Napoli. Facoltà di Medicina e Chir- urgia....(1928)	79.3,*	(1932)	75.3*
Universtyetu Jana Kazimierza Wydziału Lekarskiego, Poland....(1925)			75 *
College	FAILED	Year Grad.	Per Cent
Regia Università di Napoli. Facoltà di Medicina e Chir- urgia....(1923)	69.2,*	(1924)	60.6, 67.3
Regia Università di Palermo degli studi Facoltà di Medi- cina e Chirurgia....(1924)			71
Regia Università di Pavia degli studi Facoltà di Medi- cina e Chirurgia....(1921)			71.6

Dr. McGuire also reports 64 physicians licensed by endorsement from August 2 to December 14. The following colleges were represented:

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
University of Arkansas School of Medicine....(1931)		(1931)	Arkansas
University of Colorado School of Medicine....(1911)		(1911)	New York
Georgetown University School of Medicine....(1931)		(1931)	Maryland
Howard University College of Med....(1930)	Georgia,	(1931, 2)	Louisiana
Tulane University of Louisiana School of Medicine....(1930)		(1930)	New York
Baltimore Medical College....(1909)		(1909)	New York
University of Maryland School of Medicine and Col- lege of Physicians and Surgeons....(1930)		(1930)	New York
Boston University School of Medicine....(1902)		(1902)	Mass.,
(1930) New York			
Harvard University Medical School....(1925)		(1925)	New York
Tufts College Medical School....(1928)		(1928)	N. B. M. Ex.
University of Michigan Medical School....(1931, 3)		(1931, 3)	Michigan
St. Louis University School of Medicine....(1930)		(1930)	Missouri
Albany Medical College....(1914)		(1914)	New York
Columbia University College of Physicians and Sur- geons....(1928, 2), (1931)		(1928, 2), (1931)	New York, (1931) N. B. M. Ex.

Cornell University Med. College....(1923), (1929), (1930, 2)	New York,
(1929) N. B. M. Ex.	
Long Island College Hospital....(1929, 3)	New York
Long Island College of Medicine....(1931)	New York
New York Homeo. Med. Coll. and Flower Hosp....(1931, 4)	New York
New York Medical College and Hospital for Women....(1911)	New York
Syracuse University College of Medicine....(1931)	New York
University and Bellevue Hospital Medical College....(1927), (1928), (1930, 3), (1931, 5)	New York
Western Reserve University School of Med....(1924), (1929)	Ohio
Hahnemann Med. Coll. and Hosp. of Philadelphia....(1927)	Penna.
Jefferson Medical College of Philadelphia....(1928, 2)	Penna.,
(1928) Texas, (1929), (1930)	New York
University of Pennsylvania School of Medicine....(1930)	N. B. M. Ex.
University of Pittsburgh School of Medicine....(1923)	Penna.
Meharry Medical College....(1931)	Tennessee
University of Tennessee College of Medicine....(1930, 2)	Tennessee
Vanderbilt University School of Medicine....(1931)	Tennessee
Medical College of Virginia....(1930)	N. Carolina
Queen's University Faculty of Medicine....(1918)	Penna.
Regia Università di Napoli. Facoltà di Medicina e Chirurgia....(1906)	Illinois

* Verification of graduation in process.

Arkansas November Report

Dr. Sam J. Allbright, secretary, State Medical Board of the Arkansas Medical Society, reports the written examination held in Little Rock, Nov. 8-9, 1932. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. Five candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
College of Physicians and Surgeons, Arkansas....(1911)		(1911)	80
College of Medical Evangelists....(1919)		(1919)	84.6
Meharry Medical College....(1932)		(1932)	85.4
University of Tennessee College of Medicine....(1932)		(1932)	84
Medical Faculty of Trinity University, Canada....(1903)		(1903)	84.6

Dr. Allbright also reports 4 physicians licensed by reciprocity with other states from August 16 to November 19. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery....(1912)		(1912)	Illinois
Tufts College Medical School....(1907)		(1907)	Mass.
Meharry Medical College....(1931)		(1931)	Tennessee
University of Tennessee College of Medicine....(1930)		(1930)	Tennessee

Tennessee September Examination

Dr. A. B. DeLoach, secretary, Tennessee State Board of Medical Examiners, reports the written examination held in Memphis, Sept. 29-30, 1932. The examination covered 8 subjects and included 64 questions. An average of 75 per cent was required to pass. Twenty-six candidates were examined, all of whom passed. The following college was represented:

College	PASSED	Year Grad.	Number Passed
University of Tennessee College of Medicine....(1932, 26)		(1932, 26)	26

Texas November Report

Dr. T. J. Crowe, secretary, Texas State Board of Medical Examiners, reports the written examination held in Houston, Nov. 8-10, 1932. The examination covered 12 subjects. Three candidates were examined, all of whom passed. Nineteen candidates were licensed by reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
Northwestern University Medical School....(1930)		(1930)	1
University of Texas School of Medicine....(1932)		(1932)	1
Regia Università di Napoli. Facoltà di Medicina e Chirurgia....(1920)*		(1920)*	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine....(1927)		(1927)	Arkansas
College of Medical Evangelists....(1917)		(1917)	California
University of Colorado School of Medicine....(1932)		(1932)	Colorado
Northwestern University Medical School....(1911)		(1911)	Illinois,
(1917) Oklahoma			
Rush Medical College....(1924)		(1924)	California
Hospital College of Medicine, Kentucky....(1907)		(1907)	Kentucky
University of Louisville School of Medicine....(1928), (1932)		(1928), (1932)	Kentucky
Tulane University of Louisiana Department of Med....(1893)		(1893)	Mississippi
Tulane University of Louisiana School of Medicine....(1929)		(1929)	Mississippi,
Tennessee			
Saginaw Valley Medical College, Michigan....(1900)		(1900)	Michigan
University of Minnesota Medical School....(1925)		(1925)	Minnesota
Barnes Medical College, Missouri....(1901)		(1901)	Missouri
Meharry Medical College....(1931)		(1931)	Tennessee
Vanderbilt University School of Medicine....(1926)		(1926)	New York
Osteopaths....(1926)		(1926)	Missouri, 2

* Verification of graduation in process.

Book Notices

The British Pharmacopoeia 1932. Published under the direction of the General Council of Medical Education and Registration of the United Kingdom. Fabrikoid. Price, 21 s. Pp. 713. London: Constable and Co., Ltd., 1932.

The sixth British pharmacopoeia was issued in the latter part of 1932, marking the end of an eighteen year period during which the pharmacopoeia of 1914 had provided standards. As might be expected after the lapse of this long interval, the current revision has been quite extensive. In all, some 128 preparations have been added and about 350 omitted. Of the remainder, the composition of 36 preparations has been altered, and the strength of 13 modified. The names of 113 have been changed, some completely. Of the new preparations added, approximately 60 are official in U. S. P. X (1926) and about 30 are to be found in N. N. R. 1933; some do not occur in either. This is indicated in the following table:

Same Additional Preparations Appearing in B. P. 1932 Which Do Not Appear in U. S. P. X

B. P., 1932	N. N. R., 1933
Acriflavina	Acriflavine
Aethylenum	Ethylene
Amylocainae Hydrochloridum	Omitted from N. N. R., 1928 (Stovaine)
Antimonii et Sodii Tartaras	—
Antitoxinum Welchicum	Perfringens Antitoxin
Carboni Dioxidum	—
Ephedrinae Hydrochloridum	Ephedrine Hydrochloride
Ergotoxininae Ethanolsulphonas	—
Extractum Hepatis Liquidum	Concentrated Liver Extract
Extractum Hepatis Siccum	Liver Extract
Extractum Malti cum Oleo Morrhuae	Malt Extract with Cod Liver Oil
Fluoresceinum Solubile	Fluorescein (sodium salt)
Injectio Bismuthi	—
Injectio Sodii Chloridi et Acaciae	—
Insulinum	Insulin
Iodophthaleinum	Tetraiodophthalein sodium
Laevulolum	—
Liquor Ergosterolis Irradiati	Viosterol in Oil
Liquor Iodi Simplex	—
Serum Antidysentericum (Shiga)	Antidysenteric Serum
Sulpharsphenamina	Sulpharsphenamine
Theophyllina et Sodii Acetas	Theophylline Sodio-Acetate
Thyroxinsodium	—
Totaquina [cinchona alkaloids]	—
Toxinum Diphthericum Calefactum	Schick Test Control
Toxinum Diphthericum Detoxicatum	Diphtheria Toxin-Antitoxin
	Diphtheria Toxoid
	Diphtheria Toxin for Schick Test
Toxinum Diphthericum Diagnosticum	—
Urea	—
Vaccinum Typho-Paratyphosum (T. A. B.)	Typhoid-Paratyphoid Vaccine

As is the practice in the U. S. P., but contrary to the custom in the German pharmacopoeia, the B. P. does not permit the use of protected or exclusive names and does not include any preparation the rights to the manufacture of which are restricted. In one case, that of ergotoxine ethanesulphonate, the manufacturer relinquished the patent rights in order that the product might be made official (Hampshire, C. H.: *Pharmaceut. J. & Pharmacist* 129:414 [Nov. 12] 1932). This substance is now the standard for all ergot preparations B. P.; the Liquid Extract of Ergot contains the equivalent of 0.04 to 0.06 per cent w/v of Ergotoxine as determined by the dimethylaminobenzaldehyde color test, which replaces the biologic assay.

In the case of irradiated ergosterol in oil, the unit of antirachitic activity is defined "as the specific activity contained in such an amount of the Standard Preparation [kept in the National Institute for Medical Research] as the Medical Research Council may from time to time indicate as the quantity exactly equivalent to the unit accepted for international use." This is in keeping with the present trend of referring the activity of such substances to that of certain standard preparations. The Pharmacopoeia Commission is to be commended on allowing for future developments in this particular case.

Changes have been made in the use of the Imperial (Apothecary's) System of weights and measures. The use of the terms "drachm" and "fluid drachm" has been discontinued, and it is recommended that Roman numerals and the symbols

3 and 5 be no longer used in the writing of prescriptions; all quantities are to be stated as grains (gr.), minims (m.), ounces (oz.) or fluid ounces (fl. oz.), and are to be expressed in Arabic numerals. Where the metric system is employed, the abbreviation G. for gram is recommended. The term milliliter ("mil.") is used in place of "cc." (U. S. P. X). A valuable addition to the B. P. is the explanatory ratio expressed in the directions for making solutions: where percentages are given, these are qualified as weight in weight (w/w), weight in volume (w/v) or volume in volume (v/v).

One of the changes which may involve some confusion is the rule that the term "tincture" shall not be used to designate simple solutions of chemical substances. Accordingly, "Tincture of Iodine" becomes "Solution of Iodine," although the former name is retained as a synonym.

It is surprising to note that Heroine Hydrochloride remains official in B. P. 1932, although it was omitted from U. S. P. X, its manufacture in or importation into the United States has been interdicted, and in 1931 there appeared the Expert Report of a Technical Committee on Heroine, of the League of Nations, in which it was stated, "we believe that heroine can be entirely dispensed with" (The Heroine Habit, *Lancet* 2:55 [July 4] 1931).

It is notable also that arsphenamine does not appear in this volume; neoarsphenamine and sulpharsphenamine are, however, official.

Only a few of those preparations omitted from B. P. 1932 appear in U. S. P. X, and but one or two, such as guaiacol carbonate, are to be found in N. N. R. 1933. Those in U. S. P. X which are omitted from B. P. include acetanilid, aconitine, ammonium benzoate, ammonium bromide, bismuth subnitrate, caffeine citrate, cannabis, guaiacol carbonate, hydrastis, phosphorus, and ointment of yellow oxide of mercury.

In general, the B. P. 1932 has been enriched, by comparison with its immediate forebear, by the addition of more detailed descriptions of characters, tests and assays for the specific preparations. This is true also of the twenty-one appendixes, which include enumerations and discussions of test and standard materials and solutions; determinations of p_n , of freezing, melting, boiling and solidifying points and of viscosity; qualitative chemical reactions for B. P. substances; quantitative tests for lead and arsenic; limit tests for chlorides, sulphates and iron; tests for contaminating oils; saponification and iodine numbers of lipid substances; determinations of alcohol content; alkaloidal assays; the antimony bichloride color test for cod liver oil, and biologic assays for antirachitic vitamin, serums, old tuberculin, insulin, posterior pituitary extract, digitalis, neoarsphenamine and sulpharsphenamine.

The British Pharmacopoeia Commission and those who worked with this body in the preparation of this work are to be congratulated on the thorough, critical and far-sighted manner in which they accomplished a very difficult task.

Before the Fire Department of the City of New York, Board of Hazardous Trades. In the Matter of the Hearing Relative to Proposed Classification and Passage of Rules and Regulations in Connection with the Refrigerant Freon (Dichloro-Difluoro-Methane—Also Known as F-12 and K-12). E. T. Williams and John Kenlon in Rebuttal of Freon Manufacturers' Main Brief and Freon Manufacturers' Rebuttal Memorandum. To Present the Whole Truth as to the Hazards Attaching to the Use of Freon in Refrigerating Systems. E. T. Williams, Consulting Engineer, Servel, Inc., and John Kenlon, Consulting Engineer. Boards. Price, \$2.50. Pp. 374, with illustrations. New York: Servel, Inc., [n. d.].

This legal document, little suited for general reading by the medical profession, challenges the interest of toxicologists, industrial toxicologists, chemists and hygienists. Prepared as a brief, this partisan publication, bristling with controversy, presents both sides of the dangers of freon (dichloro-difluoromethane) to firemen working in burning buildings. Since the advent of widespread household chemical refrigeration, firemen frequently have been endangered (particularly by multiple installations such as are found in some apartment buildings) by escaping refrigerator gases. Freon, much heralded as a non-toxic refrigerant, is charged with the responsibility for unusual danger to firemen, because of decomposition under heat, which liberates such toxic agents as hydrogen fluoride, hydrogen chloride, chlorine and phosgene. If this is established, the housewife possessing a leaky refrigerator (using freon) in a kitchen with open gas flames is also confronted by a hazard to

health. Records of many tests are presented, but the results are often held up to question. Apparently, many extravagant statements are made on all sides. The conviction grows that the real issue at stake in this hearing is commercial advantage, with rival companies as the real adversaries. It is significant that this brief has as its senior compiler a consulting engineer of a refrigerator company rival to another refrigerator company owning, or partly owning, freon. Quite engagingly, this record carries the reader through exhibits, briefs, rebuttals, arguments pro and con, toxicity tables, illustrations, and the customary typographic errors. As the contest approaches the exhaustion of words and figures, an eagerness is created to learn "who won"; but the book leaves the reader to be the judge and jury. The material presented neither proves nor disproves that freon, or its decomposition products, is practically and dangerously toxic.

Hospital Practice for Interns. The Council on Medical Education and Hospitals and the Council on Pharmacy and Chemistry. Fabrikoid. Price, 75 cents. Pp. 112. Chicago: American Medical Association, 1932.

This book, which can be carried in the pocket, is designed to give interns a ready source of the kind of information they need in prescribing rationally for patients in their charge. The body of the book contains a list of drugs selected from the Pharmacopœia and New and Nonofficial Remedies, arranged according to their effects, under headings such as circulatory stimulants, diuretics and sedatives. Preceding the section on materia medica are rules for interns, intended for adoption by hospital administrations with such changes as the individual hospital staff may find necessary. While brief, these rules seem to have covered all important points in the relation of the intern to the hospital and to patients. Sections on common emergencies and on laboratory data follow. These are perhaps rather brief, but the book itself is evidently not intended to be a compendium of facts so much as an immediate source of information, which can be amplified later when the emergency has been met. Sections on symptoms and treatment of poisoning, a table of solubilities, and an index which makes rapid reference possible complete the book. This handbook will fill a long felt need of hospitals for an outline of professional conduct and practice for their interns and at the same time will exercise a strong influence toward the rational prescribing of remedies.

The Measurement of Visual Acuity. By R. J. Lythgoe. With assistance by Dorothy E. Corkill and with a section by E. S. Pearson. Reports of the Committee Upon the Physiology of Vision, X. Medical Research Council, Special Report Series, No. 173. Paper. Price, 1s. 6d. Pp. 85, with illustrations. London: His Majesty's Stationery Office, 1932.

This is one of a series of reports from the Committee upon the Physiology of Vision and consists of a critical analysis of "visual acuity" based on literature of the past and on exhaustive experimental work by the author. This material is presented in sixty-two pages, thirteen pages being devoted to the tables resulting from the experimental work. A complete bibliography and index conclude the brochure. From the ten points of his summary, the following interesting conclusions may be quoted: The acuity of the eye for estimating the continuity of short straight lines such as vernier scales is many times higher than it is for the resolution of two dots. Up to a test-object brightness of about 12 foot candles, visual acuity is directly proportional to the logarithm of the illumination and continues to improve up to and probably beyond 1,275 foot candles. This disproves the old view that visual acuity is at its maximum at 3 to 4 foot candles. Visual acuity varies with the brightness of the surrounds of the test object, increasing until the surrounds are from one one-hundredth to one tenth as bright as the test object. Beyond that point visual acuity shows a falling off. The effect of glare was investigated and is discussed at some length. The factors found to influence the relation between visual acuity and illumination are (a) definition of the end point, (b) the degree of illumination of the surrounds, (c) the duration of exposure of the test object, (d) the use of artificial pupils, and (e) the correction of the brightness of the retinal image for pupil area. On the whole, the booklet contains much information, some of which has not yet been corroborated. To one at all interested in the subject, it is worth while, both for reading and for reference.

The Diagnosis and Treatment of Postural Defects. By Winthrop Morgan Phelps, B.S., M.D., M.A., Professor of Orthopaedic Surgery, Yale University, and Robert J. H. Kipbuth, Assistant Professor of Physical Education, Yale University. Cloth. Price, \$4. Pp. 180, with 108 illustrations. Springfield, Illinois: Charles C. Thomas, 1932.

This was written by two well qualified authors, whose purpose was to utilize knowledge from many fields and to indicate correct posture and corrective measures in all types of individuals, the nonathletic as well as the athletic. There is an excellent discussion on the subject of evolutionary and environmental influences as they are related to postural defects. The material was well chosen and has been presented in an interesting manner. The illustrations are good. The double exposure films and the line drawings are instructive. Selective exercises are presented in detail and illustrated in order to facilitate their use in schools, camps, associations and clubs. The material was taken from examinations of corrective measures used with the students in Yale University, Choate School, Storm King School and Camp Marienfeld over a period of four years. A study of the environmental influences may shed definite light on the causation of postural defects. Judgment of correct posture should depend on the mechanical efficiency of the position and not on the question of slenderness or obesity. Just as the mechanical efficiency of any machine is judged by a study of the efficiency of all its parts and their correlation and the disposition of the load, so in the body all these points must be considered. The exercises, which are presented in an easily understood manner, are well chosen. There is a short, well selected bibliography. The book should be of value to the pediatrician, the physical therapist and the orthopedic surgeon.

Radiologie Maxims. By Harold Swanberg, B.Sc., M.D., F.A.C.P., Radiologist, Saint Mary's Hospital and Blessing Hospital, Quincy, Illinois. With a foreword by Henry Schmitz, A.M., M.D., LL.D., Professor of Gynecology and Head of the Department, Loyola University School of Medicine. Cloth. Price, \$1.50. Pp. 127. Quincy, Ill.: Radiological Review Publishing Company, 1932.

In this small volume the author has gathered together from numerous sources the important axioms of radiology, together with short statements pertinent to the subject of radiology contributed by physicians of note. As the title implies, each maxim expresses a general radiologic principle. The information given would require much labor and time to secure if looked for in the ordinary course of consulting periodicals and textbooks and even then would not be grasped nearly as well.

Medicolegal

Physician Liable to Insurer for Malpractice to Injured Workman.—An insurer which has paid compensation to an injured workman, under the workmen's compensation act of Massachusetts, may sue a physician whose malpractice aggravated the workman's industrial injury. The insurer may recover damages for the aggravation of the injury and for the pain and suffering of the workman. In *Vatalaro v. Thomas*, 262 Mass. 383, 160 N. E. 269, said the Supreme Judicial Court of Massachusetts, it was held that an injured workman, after he has received compensation under the workmen's compensation act, cannot maintain an action against a physician whose negligence aggravated the original injury. Compensation for the aggravation of the injury is obtainable in proceedings under the workmen's compensation act and presumably is included in such proceedings in the compensation paid by the insurer. That decision, said the court, is controlling in this case. When a workman is injured in the course of his employment under circumstances that create a liability on some person other than his employer or his employer's insurer, the injured workman must elect whether to proceed against his employer or the insurer, under the workmen's compensation act, or to proceed in court against the person by whom he was injured. If he proceeds against his employer or the insurer, the law transfers to the employer or insurer any right of action that the injured workman may have against the person by whom he was injured. The right of action thus transferred covers not only the workman's right of action because of the original

injury but also his right of action, if any, against any person by whom the original injury has been wrongfully aggravated. The fact that the injured workman has elected to proceed against his employer or his employer's insurer, for compensation under the workmen's compensation act, does not afford a loophole through which a physician can escape for the consequences of his malpractice in the treatment of the injured workman.—*Jordan v. Orcutt (Mass.)*, 181 N. E. 661.

Medical Practice Acts: Notice Requirement in Revocation Proceeding When Hearing Is Postponed.—The Missouri medical practice act, said the Supreme Court of Missouri, division 2, is to be interpreted as denying the state board of health authority to revoke a license to practice medicine, except after notice and hearing and after an opportunity is afforded the licensee to defend himself. A physician was notified to appear before the board, March 19, 1925, to answer a complaint against him. On the day set the board was busy with other matters and adjourned without hearing the physician and without informing him or his counsel when it would hear him. The board met again, April 1, without notifying the physician or his counsel, heard the cause in the physician's absence, and revoked his license. As the hearing was not held on the day set, said the Supreme Court, the physician was entitled to official notice of any other date set by the board. If the physician had appeared and defended on April 1, without objecting, he would have waived notice and estopped himself. He knew nothing about the date of the second hearing, however, and he was not charged with the duty of ascertaining that date. The physician was deprived of his right to a notice and an opportunity to defend. The order of the court below restoring the physician's license was affirmed.—*State ex rel. Baepfer v. State Board of Health of Missouri (Mo.)*, 52 S. W. (2d) 743.

Expert Testimony Necessary to Prove Malpractice.—The defendant-dentist extracted a wisdom tooth from the plaintiff's lower jaw, September 9. There was infection in the region of the tooth, and the jaw became infected. The patient continued to suffer, and the defendant extracted three more teeth. Shortly after December 3, a fracture of the jaw bone was discovered, just back of the first bicuspid tooth on the side from which the wisdom tooth had been extracted. The patient sued the dentist for malpractice, alleging that the jaw was fractured as the result of the operation on September 9. The dentist, however, claimed that the fracture resulted from the diseased condition of the jaw, produced by the infection. The patient produced no expert testimony to prove that the dentist failed to exercise that degree of care and skill in performing the extraction that he was in duty bound to exercise, but the dentist's claims were supported by the claims of several experts. The trial court set aside a verdict of the jury in favor of the patient, and he appealed to the Supreme Court of Wisconsin. Under the circumstances, said the Supreme Court, the verdict of the jury was unwarranted. It was necessary for the patient to produce expert testimony proving or tending to prove that the defendant failed to exercise that degree of care and skill required of him. Since the plaintiff failed to do so, he failed to prove actionable negligence. The judgment in favor of the defendant-dentist was affirmed.—*Lindloff v. Ross (Wis.)*, 243 N. W. 403.

Workmen's Compensation Acts: Definition of Hernia Unnecessary.—The trial court awarded a workman compensation for a hernia that developed in the course of his employment. On an appeal to the court of civil appeals, Texas, El Paso, the employer's insurer insisted that the trial court had erred in failing to give the jury "a legal definition of the term hernia." The workmen's compensation act, said the court, does not define hernia. It provides only that when a hernia is the injury alleged, certain facts must be proved to justify an award in the workman's favor. "Hernia" is an ordinary word of simple meaning. It needs no definition. It is not a legal term which has a meaning which an ordinary person would not readily understand. The trial court instructed the jury as to the facts necessary to be proved to sustain a finding that a hernia had developed, and the jury found all such facts in favor of the workman. The award in favor of the workman was affirmed.—*Texas Employers' Ins. Ass'n v. Lemons (Texas)*, 52 S. W. (2d) 767.

Society Proceedings

COMING MEETINGS

- Alabama, Medical Association of the State of, Montgomery, April 18-21. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.
- American Association for the Study of Goiter, Memphis, Tenn., May 15-17. Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Ind., Secretary.
- American Association for the Study of the Feeble-Minded, Boston, May 31-June 3. Dr. Groves B. Smith, Beverly Farms, Godfrey, Ill., Secretary.
- American Association for Thoracic Surgery, Washington, D. C., May 9-11. Dr. Duff S. Allen, 3720 Washington Boulevard, St. Louis, Secretary.
- American Association of Anatomists, Cincinnati, April 13-15. Dr. George W. Corner, University of Rochester School of Medicine, Rochester, N. Y., Secretary.
- American Association of Genito-Urinary Surgeons, Washington, D. C., May 8-10. Dr. Henry L. Sanford, 1621 Euclid Avenue, Cleveland, Secretary.
- American Association of Pathologists and Bacteriologists, Washington, D. C., May 2-3. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.
- American Bronchoscopic Society, Washington, D. C., May 10. Dr. Edwin McGinnis, 104 South Michigan Boulevard, Chicago, Secretary.
- American Gastro-Enterological Association, Washington, D. C., May 8-9. Dr. John Bryant, 311 Beacon Street, Boston, Acting Secretary.
- American Gynecological Society, Washington, D. C., May 8-10. Dr. Otto H. Schwarz, 630 South Kingshighway, St. Louis, Secretary.
- American Laryngological Association, Washington, D. C., May 9-10. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.
- American Neurological Association, Washington, D. C., May 9-11. Dr. Henry A. Riley, 117 East 72d Street, New York, Secretary.
- American Ophthalmological Society, Washington, D. C., May 8-10. Dr. J. Milton Griscom, 2213 Walnut Street, Philadelphia, Secretary.
- American Orthopedic Association, Washington, D. C., May 8-10. Dr. DeForest P. Willard, 1916 Spruce Street, Philadelphia, Secretary.
- American Otological Society, Washington, D. C., May 8-9. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.
- American Pediatric Society, Washington, D. C., May 8-10. Dr. Hugh McCulloch, 325 North Euclid Avenue, St. Louis, Secretary.
- American Physiological Society, Cincinnati, April 10-12. Dr. Frank C. Mann, Mayo Institute, Rochester, Minn., Secretary.
- American Psychiatric Association, Boston, May 29-June 2. Dr. Clarence O. Cheney, 722 West 168th Street, New York, Secretary.
- American Society for Clinical Investigation, Washington, D. C., May 8. Dr. H. L. Blumgart, Beth Israel Hospital, Boston, Secretary.
- American Society for Experimental Pathology, Cincinnati, April 10-12. Dr. C. Phillip Miller, Jr., University of Chicago Department of Medicine, Chicago, Secretary.
- American Society for Pharmacology and Experimental Therapeutics, Cincinnati, April 10. Dr. V. E. Henderson, Medical Building, University of Toronto, Toronto, Canada, Secretary.
- American Society of Biological Chemistry, Cincinnati, April 10-12. Dr. Howard B. Lewis, University of Michigan Medical School, Ann Arbor, Mich., Secretary.
- American Surgical Association, Washington, D. C., May 8-10. Dr. Vernon C. David, 59 East Madison Street, Chicago, Secretary.
- Arizona State Medical Association, Tucson, April 20-22. Dr. D. F. Harbridge, 822 Professional Building, Phoenix, Secretary.
- Arkansas Medical Society, Hot Springs, May 2-4. Dr. William R. Bathurst, 814 Boyle Building, Little Rock, Secretary.
- Association of American Physicians, Washington, D. C., May 9-10. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.
- California Medical Association, Del Monte, April 24-27. Dr. Emma W. Pope, 450 Sutter Street, San Francisco, Secretary.
- Congress of Physicians and Surgeons of North America, Washington, D. C., May 9-10. Dr. John T. King, Jr., 1210 Eutaw Place, Baltimore, Secretary.
- Connecticut State Medical Society, Hartford, May 24-25. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- District of Columbia, Medical Society of the, Washington, May 3. Dr. C. B. Conklin, 1718 M Street N. W., Washington, Secretary.
- Federation of American Societies for Experimental Biology, Cincinnati, April 10-12. Dr. C. Phillip Miller, Jr., University of Chicago Department of Medicine, Chicago, Secretary.
- Florida Medical Association, Hollywood, May 2-4. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.
- Georgia, Medical Association of, Macon, May 9-12. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.
- Harvey Cushing Society, Louisville, Ky., April 13-14. Dr. Tracy J. Putnam, 818 Harrison Avenue, Boston, Secretary.
- Illinois State Medical Society, Peoria, May 16-18. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.
- Iowa State Medical Society, Des Moines, May 10-12. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.
- Kansas Medical Society, Lawrence, May 2-4. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-26. Dr. Walter Dent Wise, 1211 Cathedral Street, Baltimore, Secretary.
- Minnesota State Medical Association, Rochester, May 22-24. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.
- Mississippi State Medical Association, Jackson, May 9-11. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Kansas City, May 1-4. Dr. E. J. Goodwin, 634 North Grand Boulevard, St. Louis, Secretary.
- Nebraska State Medical Association, Omaha, May 23-25. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.
- New Hampshire Medical Society, Manchester, May 16-17. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- North Carolina, Medical Society of the State of, Raleigh, April 17-19. Dr. L. B. McBrayer, Southern Pines, Secretary.
- Northern Tri-State Medical Association, La Porte, Indiana, April 11. Dr. E. P. Gillette, 320 Michigan Street, Toledo, Ohio, Secretary.
- Oklahoma State Medical Association, Oklahoma City, May 15-17. Dr. C. A. Thompson, Commercial National Bank Building, Muskogee, Secretary.

Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 167 Angell Street, Providence, Secretary.
Society for the Study of Asthma and Allied Conditions, Washington, D. C., May 6. Dr. W. C. Spain, 116 East 53d Street, New York, Secretary.
South Carolina Medical Association, Spartanburg, April 18-19. Dr. E. A. Hines, Seneca, Secretary.
South Dakota State Medical Association, Huron, May 15-17. Dr. John F. D. Cook, Langford, Secretary.
Tennessee State Medical Association, Nashville, April 11-13. Dr. H. H. Shoulders, 706 Church Street, Nashville, Secretary.
Texas, State Medical Association of, Fort Worth, May 8-11. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.
West Virginia State Medical Association, Charleston, May 8-10. Mr. Joe W. Savage, Professional Building, Charleston, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, New York

22:1215-1332 (Dec.) 1932

- *Role of Activated Milk in Antirickets Campaign. A. F. Hess, New York.—p. 1215.
- Protective Value for Infants of Various Types of Vitamin D Fortified Milk: Preliminary Report. J. McK. Mitchell, J. Eiman, Dorothy V. Whipple and J. Stokes, Jr., Philadelphia.—p. 1220.
- Study of Lobar Pneumonia in Massachusetts: Methods and Results of Pneumococcus Type Determination, 1931-1932. R. Heffron and Florence M. Varley, Boston.—p. 1230.
- Incidence of Tularemia in New York State. Ruth Gilbert and Marion B. Coleman, Albany, N. Y.—p. 1249.
- *Serology of Syphilis from Standpoint of Public Health Laboratory, with Special Reference to Precipitation Methods. J. A. Kolmer, Philadelphia.—p. 1253.
- Appraisal Form for Industrial Health Service. L. D. Bristol, New York.—p. 1263.

Activated Milk in Antirickets Campaign.—Hess states that in endeavors to protect the community from disease our usual concern is to have at our command a specific agent that is effective. In regard to rickets, quite the contrary holds true. An activated milk should be singled out for prophylactic use because it provides a therapeutic measure which is automatic, in that the specific agent is embodied in the food which is essential for the nutrition of the infant and because milk has the distinction and advantage of being the food which contains calcium and phosphorus in the highest degree. Seven years ago the author reported experiments showing that milk can be activated by means of exposure to ultraviolet energy and a year ago that the milk of cows which are receiving large quantities of irradiated yeast develops high antirachitic potency and may be recommended to protect infants from rickets. Milk can be rendered highly antirachitic by subjecting it for a period of sixteen seconds to the radiations of certain carbon arc rays. In the course of this process it does not develop any disagreeable taste or odor nor is it deprived of its essential vitamins. The department of health in New York established unequivocally that such irradiated milk is able to prevent rickets almost without exception. Biologic assays of this milk showed that it did not vary to a great extent in vitamin D content. It is the established custom to refer to an antirachitic agent such as viosterol, cod liver oil, or irradiated milk as possessing a certain number of antirachitic units per cubic centimeter or per quart. It was found that 35 units of irradiated milk, as determined by the standard rat technic, sufficed to protect a large series of infants. Clinical experiences of this kind are supported by suggestive laboratory observations. Activated milk, in the fluid or dry form, not only possesses the advantage of providing an automatic method of preventing rickets and of supplying this essential factor in a medium rich in phosphorus and calcium but accomplishes this end by means of an exceptionally small amount of the antirachitic factor.

Serodiagnosis of Syphilis.—Kolmer points out that, by employing tests possessing the maximum of sensitiveness con-

sistent with specificity, public health laboratories can do a great deal in minimizing the error of insufficient treatment of syphilis. Precipitation tests for syphilis are more economical than the Wassermann test, since a hemolytic system is not required, but they demand an equal degree of skill and are more subject to error and interpretation of weakly positive and doubtful reactions. Various precipitation tests for syphilis when compared with complement fixation tests lacking in acceptable sensitiveness and specificity result in erroneous conclusions. The use of two or more precipitation procedures has not proved as satisfactory as complement fixation and precipitation tests of acceptable sensitiveness and specificity for the routine testing of serums. It is impossible at present to make a choice of a single precipitation test from among the large number available. The new Meinicke or "clarification" test has been found more sensitive than the Kahn test, of equal specificity and easier to read and interpret the reactions. In a comparative study of the Kline microscopic and Kahn precipitation tests and the Kolmer modification of the Wassermann test, the reactions agreed in 86.7 per cent of more than 1,000 serums and disagreed in 13.3 per cent. The Kline microscopic test was more sensitive than the Kahn and the Kolmer tests but likewise gave a higher percentage of nonspecific or falsely positive reactions than the Kahn test, while the Kolmer modification of the Wassermann test gave no falsely positive reactions. At present, the serum diagnosis of syphilis is best served by conducting a carefully chosen complement fixation and precipitation test on each serum.

Florida Medical Association Journal, Jacksonville

19:273-310 (Jan.) 1933

- Trichomonas Vaginalis. W. M. Rowlett, Tampa.—p. 281.
- Resorcinol in Treatment of Dermato-phytosis. A. Brown, Jacksonville.—p. 283.
- Malaria a Challenge. H. Hanson, Jacksonville.—p. 283.
- Comparative Values of Respiratory Stimulants. J. H. Rutter, Daytona Beach.—p. 287.
- Practical Estimation of Renal Function. D. P. Bird, Lakeland.—p. 288.

Indiana State Medical Assn. Journal, Fort Wayne

26:1-50 (Jan. 1) 1933

- Penetrating Wounds of Skull: Recovery in Unusual Case. J. R. Pugh, Hammond.—p. 1.
- Acute Appendicitis in Children. H. J. Graham, Mishawaka.—p. 3.
- Blood Transfusion. R. B. Stout, Elkhart.—p. 8.
- Eye Symptoms of Brain Tumor. M. Ravdin, Evansville.—p. 11.
- Clinical Variations in Thyroid Surgery. G. Link, Indianapolis.—p. 18.

Journal of Pediatrics, St. Louis

1:661-796 (Dec.) 1932

- Responsibility of Children's Hospital to Its Interns. T. B. Cooley, Detroit.—p. 661.
- Calcinosis and Scleroderma: Treatment of Case by Use of Ketogenic Diet. R. L. J. Kennedy, Rochester, Minn.—p. 667.
- Massive Generalized Tuberculous Infection in Children, with Recovery. L. B. Dickey and Dorothy J. Starks, San Francisco.—p. 674.
- Some Facts About So-Called Neuropathic Constitution. Esther L. Richards, Baltimore.—p. 686.
- Hemolytic, Hemophilic Bacillus ("Bacillus X") in Subacute Bacterial Endocarditis. L. D. Fothergill, Marian Sweet and J. Hubbard, Boston.—p. 692.
- Infectious (Subacute Bacterial) Endocarditis with Cerebral Thrombosis: Report of Case. M. G. Peterman, Milwaukee.—p. 699.
- *Critical Clinical Study of Concentrated and Dried Infant Foods: II. Modified Dried Milk. A. G. de Sanctis, J. D. Craig and O. L. Springfield, New York.—p. 704.
- Infant and Maternal Mortality in Denver. F. P. Gengenbach, Denver.—p. 719.
- *Convalescent Serum in Prevention of Mumps. M. Zeligs, Cincinnati.—p. 727.
- Influence of Age Factor on Frequency and Monthly Seasonal Incidence of Respiratory Infections. C. C. McLean, Birmingham, Ala.—p. 729.
- Argyria: Report of Case in Patient Aged Five and a Half Years. L. T. Royster, University, Va.—p. 736.
- Seasonal Incidence of Poliomyelitis In and About Cleveland. J. A. Toomey and H. A. Lipson, Cleveland.—p. 739.
- *Nutritive Value of Strained Vegetables in Infant Feeding. G. W. Caldwell, New York.—p. 749.
- Von Recklinghausen's Disease in Children: Report of Case Presenting Cutaneous Pigmentation and Bone Changes. S. D. Leader and M. J. H. Grand, New York.—p. 754.
- Antiques of Pediatric Interest. T. G. H. Drake, Toronto, Canada.—p. 764.

Concentrated and Dried Infant Foods.—In their critical clinical study of 117 infants fed a modified dried milk, de Sanctis and his associates observed that this dried milk meets the nutritional requirements of the normal infant: vitamins A and B are both present in the usual quantities found in fresh

milk, and vitamins C and D must be supplied by antiscorbutic and antirachitic agents. This food is easily digested by the normal infant. Although the general practice is to discontinue a modified dried milk at the usual age of weaning, children do well on it even if it is continued to the age of 1 year or later. The gain in weight and the physical development in general in their series of cases compare favorably with groups fed various other foods. The excellent average gain in weight in their athreptic group of infants shows the value of this modified dried milk as a concentrated food in the feeding of marantic infants. There was no greater incidence of infection in this group of cases than in a control group.

Convalescent Serum in Prevention of Mumps.—Zeligs gave forty-four boys aged from 10 to 18 years, who according to their history had never had mumps and who had been definitely exposed, since they slept in dormitories with the beds quite close together, ate in common dining rooms and were together in the classrooms and playgrounds, an injection of 5 cc. of convalescents' serum seven days after exposure to the disease. None developed mumps. It appears from the author's report and from the data in the literature that convalescents' serum is of definite value in the prevention of mumps in exposed persons if employed early and in sufficient dosage.

Nutritive Value of Strained Vegetables.—According to Caldwell, strained vegetables were well tolerated and digested in a series of young infants studied from this standpoint. Digestive disturbances were not encountered, undoubtedly because during the straining process to which these vegetables are subjected most of the fiber is removed, leaving only the mineral, vitamin and nutritive elements. The quantity of strained vegetables used was 1 ounce daily for infants under 3 months of age, 2 ounces daily for infants between 3 and 5 months, and $4\frac{1}{2}$ ounces daily for infants over 5 months. Properly prepared vegetables contain an adequate supply of minerals and vitamins to promote optimal development of bones and teeth.

New England Journal of Medicine, Boston

207:1069-1124 (Dec. 15) 1932

- *Follow-Up Report on Clinical Study of Two Hundred and Fifty Cases of Cardiac Asthma and Survey of Additional Group of Twenty-Two New Cases. S. McGinn and P. D. White, Boston.—p. 1069.
- High Points in Recommendations of Committee on the Costs of Medical Care. R. L. Wilbur, Washington, D. C.—p. 1073.
- New Method of Administering Oxygen: Preliminary Note. A. M. Burgess and A. M. Burgess, Jr., Providence, R. I.—p. 1078.
- Complications of Pregnancy as They Affect Maternal Nervous System and Bony Pelvis. C. J. Kickham, Boston.—p. 1082.
- Progress in Laryngology. L. A. Schall, Boston.—p. 1083.

Clinical Study of Cardiac Asthma.—McGinn and White followed up a series of 250 cases of cardiac asthma to the deaths of 230 of the patients, and reviewed a smaller supplementary group of 22 cases. Patients presenting this symptom of organic heart disease are most frequently men over 50 years of age with hypertensive or coronary heart disease. Although exceptions are not uncommon, the average expectancy of life was found to be little more than two years, one out of four patients dying within six months. The better the treatment, the longer the life. Rarely a patient may become free from attacks. The prognosis is much more serious when cardiovascular syphilis is the underlying factor or when cardiac asthma is associated with congestive failure, aortic regurgitation or auricular fibrillation. The presence of pulsus alternans, gallop rhythm or severe long attacks likewise makes the outlook dubious. Chronic passive congestion and left ventricular hypertrophy were the principal observations in fifteen postmortem examinations. The most effective treatment of acute attacks of cardiac asthma has consisted in the hypodermic injection of morphine and the assumption of the upright position; these measures have generally been successful. Venesection has been rarely required, but it should be carried out in severe attacks. Hemostasis by the application of tourniquets (blood pressure cuffs preferably) to the four extremities has not been employed in these groups. Diuretics, whether or not there have been signs of congestive heart failure, have been beneficially added to the usual rest and digitalization prescribed for these patients. The establishment and maintenance of an adequate digitalis effect are of the greatest value in most cases for the prevention of cardiac asthma and the prolongation of life.

Southwestern Medicine, Phoenix, Ariz.

16:485-526 (Dec.) 1932

- Primary Carcinoma of Bronchus. W. S. Lemon, P. P. Vinson, H. J. Moersch and B. R. Kirklín, Rochester, Minn.—p. 485.
- Management of Cancer of Breast. A. Soland, Los Angeles.—p. 493.
- Object of the Cancer Commission. C. G. Toland, Los Angeles.—p. 494.
- Diagnosis and Treatment of Adenomatous Goiter. J. W. Hendrick, Amarillo, Texas.—p. 501.
- Arthritis. Under the Light of Recent Research. E. D. McBride, Oklahoma City.—p. 504.

Surgery, Gynecology and Obstetrics, Chicago

55:681-798 (Dec.) 1932

- *Unilateral Exophthalmos in Intracranial Tumors, with Especial Reference to Its Occurrence in Meningiomas. C. A. Elsberg, C. C. Hare and C. G. Dyke, New York.—p. 681.
- Hiccup. C. W. Mayo, Rochester, Minn.—p. 700.
- *Acute Gallbladder Manifesting Few Signs or Symptoms. S. H. Mentzer, San Francisco.—p. 709.
- Postoperative Pulmonary Complications. E. L. Eliason and C. McLaughlin, Philadelphia.—p. 716.
- *Surgical Menopause After Hysterectomy, With and Without Ovarian Conservation. J. V. Sessums and D. P. Murphy, Philadelphia.—p. 728.
- Studies on Peripheral Vascular Phenomena: I. New Device for Study of Peripheral Vascular Phenomena in Health and Disease. C. A. Johnson, Chicago.—p. 731.
- Id.: II. Observations on Peripheral Circulatory Changes, Following Unilateral Cervical Ganglionectomy and Ramisection. C. A. Johnson, G. W. Scupham and N. C. Gilbert, Chicago.—p. 737.
- Technic of Operation for Cancer of Female Breast: End-Results in One Hundred and Twenty-Nine Cases Seven Years After Operation. J. N. Jackson and J. H. Ogilvie, Kansas City, Mo.—p. 742.
- Surgery of Ankylosed Joint. W. C. Campbell, Memphis, Tenn.—p. 747.
- Fractures of Metacarpals and Phalanges. R. W. McNealy and M. E. Lichtenstein, Chicago.—p. 758.
- Fractures of Jaw. F. A. Figi, Rochester, Minn.—p. 762.
- *Vaginal Versus Rectal Examinations in Relation to Obstetric Morbidity, Following Mercurochrome Technic: Analysis of Three Thousand Eight Hundred, and Eighty-Four Cases at Methodist Episcopal Hospital in Brooklyn, N. Y. H. W. Mayes, New York.—p. 771.
- Mortality Factors in Gynecology: Statistical Study of Deaths from 1902 to 1932 at Free Hospital for Women, Brookline. M. K. Bartlett and F. A. Simmons, Jr., Brookline, Mass.—p. 777.

Unilateral Exophthalmos in Intracranial Tumors.—Elsberg and his associates found in a series of 807 intracranial tumors marked unilateral exophthalmos in fifteen patients. Most of the tumors were meningeal fibroblastomas, but exophthalmos occurred also in a case of primary carcinoma of a sweat gland of the scalp, in an epidermoid in the middle cranial fossa, in two cases of orbito-ethmoidal osteoma and in a case of Paget's disease with intracranial complications. Unilateral exophthalmos may also occur in metastatic carcinoma and in venous and arteriovenous angiomas. The protrusion of one eyeball was often, for a number of years, the only symptom. The exophthalmos was most frequently on the left side in females and on the right side in males. In many of the patients there was also a cranial hyperostosis, visible when on the vertex and demonstrable by roentgen rays when on the base. The protrusion of the eyeball was most often due to perforation of the tumor into the orbit, thickening of the orbital walls, extension of the growth through an enlarged superior orbital fissure, or increase of pressure in the middle cranial fossa directly transmitted to the orbital contents through the superior orbital fissure. There was no positive evidence in any case that the unilateral exophthalmos was the result of compression of the cavernous sinus or the ophthalmic veins and venous stasis.

Acute Gallbladder Disease Manifesting Few Symptoms.—Mentzer states that the total cholecystic lesions encountered during the period between 1919 and 1931 at the San Francisco Hospital were 93 cases of pericholecystitis, 134 of acute cholecystitis, 630 of chronic cholecystitis, 639 of chronic cholelithiasis and 118 of common duct stone or carcinoma. Of the 134 patients presenting acute cholecystitis, 43 were operated on for perforation, gangrene or acute empyema. Of these, 17 were men and 26 women, aged from 20 to 85. The greatest number of operations occurred between the ages of 45 and 50, although there was a surprisingly high percentage between the ages of 60 and 70. Two moderately severe instances of acute gangrenous cholecystitis developed in persons aged 23 and 25. Six of the forty-three patients stated that they had never had stomach distress of any sort. Two had had distress of less than three months' duration; the remaining thirty-five patients gave a history of suggestive or typical gallbladder disease over relatively long periods of time. Only two of the patients, however, had been previously jaundiced. One patient stated that

there had not been acute symptoms and maintained that he had had no distress even immediately before operation. One patient was operated on for a strangulated femoral hernia: the hernia was present but not incarcerated, and a ruptured gallbladder caused the acute abdominal symptoms. One patient was operated on for a ruptured ulcer. His previous history was quite typical of chronic duodenal ulcer, but at operation an early gangrene of the gallbladder was found but no peptic ulcer. Only one patient had a history of acute onset twelve hours before exploration. This patient recovered. Eight patients had distress for one day or less, and one patient had an exacerbation of acute cholecystic signs for one day before operation was performed. The majority of the patients were observed from one to six days before operation. The author discusses pain, indigestion, tenderness, jaundice, fever and the leukocyte count as it affected the forty-three patients with acute cholecystitis on whom he operated. He concludes that the pathologic changes present in acute cholecystitis cannot be adequately evaluated clinically. Exploratory laparotomy should be instituted earlier in suspected cases of advanced acute cholecystitis. Perforations and gangrene of the gallbladder occur more frequently than is usually believed. Acute empyema of the gallbladder is best treated by conservative surgery (i. e., cholecystostomy). Perforations and gangrene warrant early cholecystectomy.

Surgical Menopause After Hysterectomy.—Sessums and Murphy interrogated ninety-one women, subjected to hysterectomy with retention of one or both ovaries, and fifty-two women, subjected to hysterectomy and bilateral oophorectomy, before the age of 36, with reference to the incidence, onset, duration and severity of the surgical menopause, as indicated by its most important symptom, the hot flush. They observed that the surgical menopause occurred in more patients, took place sooner, and was more severe after hysterectomy with associated bilateral oophorectomy than when one or both ovaries were conserved. The surgical menopause, after hysterectomy with and without associated bilateral oophorectomy, persisted in three fourths of their patients at the time of the last observation. In the remaining fourth, it had been completed. Its duration was shorter after associated bilateral oophorectomy than after hysterectomy with ovarian conservation. From this study and a previous one they conclude that, when hysterectomy is to be performed during the childbearing period, the best interest of the patient is guarded by conservative treatment of ovarian tissue.

Vaginal Versus Rectal Examinations.—Mayes points out that the use of mercurochrome as a vaginal antiseptic during labor makes vaginal examinations safe. The prevailing high stillbirth rate may be due in part to the fact that abnormal conditions are not recognized in time by rectal examinations. Every patient should have at least one vaginal examination early in the course of her labor and, if labor is not normal, it should be repeatedly checked by a vaginal examination. The author states that a review of the literature emphasizes the inaccuracy of rectal examinations and that vaginal examinations are much more satisfactory. Rectal examinations may injure the rectovaginal septum and aggravate pathologic conditions, such as hemorrhoids and fissures. Following viable vaginal deliveries, 3,884 cases gave an uncorrected morbidity of 5.7 per cent. In 1,947 cases with only rectal examinations there was a morbidity of 5.08 per cent, and in 3,180 cases with at least one rectal examination the morbidity was 5.4 per cent. In the 595 patients on whom only vaginal examinations were made, the morbidity was 6.8 per cent; while in 985, 380 of whom had had a single rectal examination before being prepared, the morbidity was 6.5 per cent. Of the 1,828 patients who had 4,811 vaginal examinations, an average of 2.6 to the patient, the morbidity was 6.3 per cent. In the 109 patients on whom no examinations were made during labor, the morbidity was 8.2 per cent. In the cesarean group there was less morbidity following vaginal than rectal examinations. In the author's 238 personal patients on whom at least one vaginal examination was made, the morbidity was 4.9 per cent; and in 36 patients with only rectal examinations, the morbidity was 4.7 per cent. The slight increase (about 1 per cent) in the morbidity in all the vaginal groups can be accounted for by the fact that vaginal examinations were done in all the more difficult cases and in those in which labor was prolonged.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

17: 1-64 (Jan.) 1933

- Lateral Eyes of Sphenodon, with Especial Reference to Macular Region. Ida Mann.—p. 1.
*Penetrating Wounds of Posterior Chamber of Eye. W. A. Gray.—p. 15.
Severe Sympathetic Inflammation Brought to Successful Conclusion: Case. J. H. Fisher.—p. 35.
New Lacrimal Sac Retractor. V. P. Patel.—p. 39.
Does Trauma Favor Occurrence of Echinococcus in Orbit? V. P. Patel.—p. 40.
Diabetic Retinitis: Case. A. B. Zorab.—p. 41.

Wounds of Posterior Chamber of Eye.—Gray reports that under experimental conditions in the rabbit, as under conditions of clinical injury in man, the prolapsed vitreous has a considerable power of resisting infection which might lead to the destruction of the eyeball. The injection of even a minute quantity of a virulent pyogenic organism such as *Bacillus pyocyaneus* to a depth of 5 mm. or more into the vitreous is almost invariably followed by a rapidly destructive suppuration of the eyeball. On the other hand, it was difficult to produce infection by flooding the surface of vitreous prolapse with the same bacteria even in great concentration. There seems little doubt that the vitreous provides a reasonably good culture medium for bacteria, and it is hard to understand why the spread of infection does not take place. It cannot be claimed that the experiments explain this difference in the result of superficial and deep inoculation, but certain possible explanations appear to have been eliminated. No significant bactericidal action of the tears or of the animal's serum could be demonstrated. Nor was it possible to consider that the mechanical action of the eyelids or dilution and removal of the bacterial inoculum by tears was responsible for the benign course of superficial prolapse. Bacteria in excess of those producing an invariable panophthalmitis on deeper inoculation could be introduced without effect into the surface of the prolapse while the latter was covered with a valvelike flap of conjunctiva. Although the position of the surface prolapse implies its close proximity to the vascular choroid, there was no histologic evidence that phagocytosis of the inoculated bacteria played any significant part.

British Journal of Urology, London

4: 307-421 (Dec.) 1932

- Fibromyxosarcoma of Spermatic Cord: Report of Case and Review of Literature of Cord Tumors. D. W. Mackenzie.—p. 307.
Periarteritis Nodosa: Report of Case Involving One Kidney. R. E. Powell and J. E. Pritchard.—p. 317.
Excretion Urography with Per-Abrodil. H. P. Winbury-White.—p. 328.

British Medical Journal, London

2: 1131-1176 (Dec. 24) 1932

- Observations Concerning Relationship Between Cholesterol Metabolism and Vascular Disease. L. Aschoff.—p. 1131.
Biochemical Syndrome of Uremia. G. Thompson.—p. 1134.
Survey of Three Hundred and Forty Cases of Acute Appendicitis. J. M. Black.—p. 1136.
*Rectal Paraldehyde Before Operation. J. D. Stewart.—p. 1139.
Tropical Typhus. W. Fletcher.—p. 1140.
Spontaneous Acute Myxedema: Case. H. A. Watney and A. H. Douthwaite.—p. 1142.
Fundamental Principles of Obstetric Practice. Louise McIlroy.—p. 1158.

Rectal Paraldehyde Before Operation.—Stewart reports his experience in 500 cases in which he administered paraldehyde rectally before operation. He gives the paraldehyde in saline solution in the relative proportions of 1½ ounces (45 cc.) of saline solution to each drachm (3.75 cc.) of paraldehyde. The adult dose is 8 drachms (30 cc.) of paraldehyde, except when the patient's weight is less than 112 pounds (50 Kg.). His procedure is as follows: The evening before operation the patient is given an enema, and a sedative such as barbital, diallyl-barbituric acid or cyclohexenyl ethyl barbituric acid. The following morning, one and a half hours before operation, ¼₁₀₀ grain (0.00065 Gm.) of atropine is administered hypodermically and immediately afterward the paraldehyde solution, freshly mixed and thoroughly shaken, is slowly introduced into the rectum by means of a catheter. Retention is rarely difficult. Sleep usually supervenes within a few minutes and is not disturbed when the patient is moved to the operating room.

The patient remains oblivious to the administration of the anesthetic, and induction is singularly easy and rapid, owing to the complete absence of resistance or excitement. The maintenance of anesthesia is a simple matter and a surprisingly small quantity of anesthetic is required. After the operation the patient sleeps quietly for a variable number of hours. He can be awakened during this period, but quickly goes off to sleep again. Spontaneous awakening usually occurs from five to eight hours after the operation, the patient remaining drowsy and comfortable for a considerably longer period and securing, in most cases, a restful first night, often without the aid of morphine. The author concludes that rectal paraldehyde provides a safe and certain method of eliminating for the patient the more unpleasant accompaniments of operation. He remains relatively comfortable during the trying twenty-four hours following operation, and subsequent distressing recollections are absent. Preliminary rectal paraldehyde, while facilitating the anesthetist's task, adds nothing to his anxieties concerning the patient either during or after the operation.

Journal of Physiology, London

77:1-110 (Dec. 19) 1932

- *Double Vagotomy in Relation to Respiration. G. V. Anrep and A. Samaan.—p. 1.
- Observations on Panting. G. V. Anrep and M. Hammouda.—p. 16.
- Pressure of Aqueous Vapor in Alveolar Air. R. V. Christie and A. L. Loomis.—p. 35.
- Studies in Muscular Activity: VII. Factors Limiting Capacity for Work. D. B. Dill, H. T. Edwards and J. H. Talbot.—p. 49.
- Physiologic Leukocytosis: II. Postprandial Leukocytosis and Widal's Hemoclastic Test for Hepatic Efficiency. H. E. Martin.—p. 63.
- *Action of Adrenalin on Cardiac Vagus Centers. G. Stella.—p. 68.
- Phlorhizin Diabetes in Fasting or Fed Hypophysectomized Dogs. A. Biasotti and B. A. Houssay.—p. 81.
- Ketosis in Pancreatic and Phlorhizin Diabetes of Hypophysectomized Dogs. C. T. Rietti.—p. 92.
- Blood Cholesterol in Anesthesia. A. C. Ghose.—p. 97.
- Metabolism of Lactose: Part II. Blood Sugar During Lactation. L. B. Winter.—p. 100.
- Negative Phase in Heat Production of Muscle. W. Hartree.—p. 104.

Double Vagotomy and Respiration.—Anrep and Samaan subjected to an experimental test the pulmonary, laryngeal and the cardio-aortic theories of the respiratory slowing down that follows double cervical vagotomy. Their experiments fail to support Sharpey-Schafer's view that the classic respiratory slowing down is due to paralysis of the laryngeal muscles. They also fail to support Heymans' view that it is due to a cardio-aortic denervation. The effect of double vagotomy on respiration is due to the denervation of the lungs.

Epinephrine on Cardiac Vagus Centers.—Stella states that epinephrine, injected intravenously in dogs in moderate doses (from 0.002 to 0.005 mg. per kilogram), enough to cause an increase of arterial pressure and a marked slowing of the heart, does not seem to have any direct exciting effect on the cardio-inhibitory centers. Epinephrine administered in these amounts is, nevertheless, not entirely without action on the centers, since it increases the reflex excitability of the cardio-inhibitory centers to afferent impulses from the depressor and the carotid sinus nerves. Epinephrine bradycardia is reflex in origin and due to the arterial pressure acting on the sensitive regions of the carotid sinus and of the territory of distribution of the depressor nerves; its degree, however, is conditioned by a state of increased reflex excitability of the cardiac vagus centers caused by the injected epinephrine.

Journal of State Medicine, London

40:683-744 (Dec.) 1932

- Some New Investigations Regarding Old Bacteriologic Problems. M. Neisser.—p. 683.
- Health of Chromium Plating Workers. H. B. Trumper.—p. 696.
- Silico-Anthraxis. W. E. Cooke.—p. 702.
- Workmen's Compensation in Pulmonary Disease. C. L. Sutherland.—p. 709.
- Rats and Vermin and Their Role in Spread of Disease. W. M. Frazer.—p. 717.
- Use of Tuberculin in Treatment of Pulmonary Tuberculosis. J. R. Gillespie.—p. 727.
- Care of Eyes of Industrial Workers. M. Shaw.—p. 732.

South African Medical Journal, Cape Town

6:791-826 (Dec. 24) 1932

- Counter-Prescribing. W. Froemhling.—p. 793.
- Life-Cycle of Malaria Parasites in Human Blood. A. Bonta.—p. 796.
- Atebrin in Malaria. W. J. May.—p. 801.
- Urbanization of the Bantu. D. L. Ferguson.—p. 802.
- Study of Comparative Pathology. G. de Kock.—p. 806.

Gazette Hebdomadaire des Sciences Méd. de Bordeaux

54:65-80 (Jan. 29) 1933

- *Cultures of Tubercle Bacilli on Ordinary and Distilled Water. M. J. Caussimon.—p. 68.

Culture of Tubercle Bacilli in Water.—Caussimon states that tubercle bacilli which have been propagated in glycerinated oxbile for years, according to Calmette and Guérin, can grow in ordinary or distilled water (nonsterilized), at room or incubator temperature. In water the BCG culture develops in the form of a light translucent veil at the surface, extending downward. The veil consists of a cyanophilic stroma, composed of homogeneous matter, granulations, filaments and sporulated elements on which grow abundant acid-fast bacilli, short, long and granular forms. The cultures can be transplanted on water. The appearance of acid-fast bacilli in the transplants on water may require from one to three months. The transfer of aqueous cultures to the customary rich mediums is almost always negative. The properties of the BCG cultures grown on water may be conserved for a long time, but in some cultures a partial disappearance of the acid resistance is observed; the virulence usually disappears completely despite the persistence of the acid resistance. Some of the aqueous cultures were kept alive for more than a year, but all of them finally died. Virulent human tubercle bacilli can be transferred directly from glycerinated potato medium to water but it is difficult to transplant them back to highly nutritive mediums. The virulence disappears after a period of aqueous culture.

Presse Médicale, Paris

41:185-208 (Feb. 4) 1933

- Familial Hemorrhagic Angiomatosis. C. Aubertin, R. Lévy and Mme. Bacless.—p. 185.
- *Roentgen Irradiation of Suprarenal and Cervical Sympathetic Region in Vasomotor Disturbances of Extremities. L. Langeron and Desplats.—p. 189.
- Treatment of Ozena by Bacteriophage Associated with Medicamentous Vasodilation or Roentgen Therapy. Halphen and Djiropoulos.—p. 190.
- *Sodium Morrhuate for Sclerosing Treatment of Varicose Veins. R. Tournay.—p. 192.
- Pure Gonococcal Septicemia. I. Nanu, D. Jonnesco, I. Claudiu and A. Brull.—p. 194.

Irradiation of Suprarenal and Cervical Sympathetic Region.—Langeron and Desplats employed roentgen irradiation of the suprarenal and cervical sympathetic regions for the treatment of vasomotor disturbances of the extremities in forty-one cases. Good results were obtained in the case of the syndrome of Raynaud's disease supervening in the course of generalized arteritis, acroparesthesia, erythromelalgia, post-traumatic disturbances and trophic disturbances associated with a general sympathetic disturbance; the results were poor in autonomous Raynaud's disease due to local arteritis or acrocyanosis. The authors think that possibly irradiation of the suprarenal region is preferable for the lower extremities, while irradiation of the laterocervical region at the level of the first dorsal vertebra is preferable for the upper extremities, but there is probably no essential difference between the methods and they advise utilizing the two simultaneously. They employed doses of 500 roentgens once or twice weekly; there is no advantage in giving stronger doses or repeating them more frequently. This treatment must be instituted cautiously: aiming to reestablish a disturbed sympathetic equilibrium, one must watch the abnormal excitability of such a sympathetic and its reaction to the doses employed.

Sodium Morrhuate for Sclerosing Treatment of Varicose Veins.—Tournay states that sodium morrhuate in a 5 per cent solution is an excellent sclerosing agent for varicose veins and merits comparison with the best agents now in use. Starting with 0.5 cc. of a 5 per cent solution, the dose is gradually increased to 1.5 cc. according to the result obtained. An injection of 1.5 cc. almost always suffices to sclerose a vein of medium caliber. Only in exceptionally large phlebectases are doses of from 2 to 5 cc. required. In rare cases in which a 5 per cent solution produces only a thickening of the wall without complete obturation, a 10 per cent solution may be used. Its advantages are: the facility of the technic (injection of small quantities, fluidity of the solution); the painlessness of the injection; the low causticity for the perivascular tissues; the lack of toxicity of therapeutic doses, and the possibility of

rapid treatment. The disadvantages of sodium morrhuate are: the difficulty of preparing the substance; its lack of stability; the fact that the fibrosis produced is not always extremely firm and solid; greater frequency of recurrences and the formation of blood pockets between the sclerosed segments, and the sometimes prolonged sensitivity of the sclerosed segments. The author recommends its use when rapid treatment is desired or if the patient fears the cramp produced by the salicylate, or in cases in which the other substances have proved insufficient.

Policlinico, Rome

40: 123-162 (Jan. 23) 1933. Practical Section

- Studies and Experiences with Focal Infections. M. Lusena.—p. 124.
*Several Cases of Cerebral Rheumatism. A. Ferri.—p. 135.

Cerebral Rheumatism.—Ferri reports on three patients, aged from 30 to 35, who had several preceding attacks of polyarthritis complicated by visceral localizations and by moderate and remittent fever unmodified by salicylates and finally rising to hyperpyrexia and death, with symptoms indicating involvement of the cerebellum previous to the establishment of the high temperatures. No alcoholism was observed. Other symptoms of the disease, described by Oddo, were present: intense spontaneous sudoresis, cephalaea, insomnia, nocturnal delirium and melancholia. According to several authors, hyperpyrexia is the most important precursory sign of the disease; others maintain that the disappearance of arthropathy together with the quick rise in temperature and the aggravation of general symptoms constitutes an extremely important factor in the genesis of cerebral rheumatism. The author states furthermore that, when in cases of acute rheumatic polyarthritis, especially if grave and recurrent, the sodium salicylate treatment fails and the temperature rises despite the antithermic chemotherapy, antipyretic treatment should be administered immediately. The author advocates the ice bag, which is more localized and leads less to shock than the water bath advocated by others.

Archiv für Kinderheilkunde, Stuttgart

98:129-192 (Jan. 24) 1933

- *Measles and Tuberculosis. H. Koch.—p. 129.
*Sarcomatous Tumor of Pleura in Child. U. Neumann.—p. 139.
Icterus Gravis Neonatorum. G. Meyer.—p. 143.
Permeability of Colon of Nurslings for Foreign Protein. E. von György and J. Surányi.—p. 151.
Comparative Investigations on Active Immunization Against Diphtheria with Formoltoxoid (Anatoxin) Vaccines. H. Happe.—p. 154.
Action of Intravenous Hypertonic Dextrose Infusion. E. György and L. Veszelszky.—p. 164.
Metabolic Studies on Older Children During Vegetarian Diet (with Consideration of Protein Minimum). Franziska Boldt.—p. 168.

Measles and Tuberculosis.—According to Koch, measles leads quite frequently to activation of tuberculosis. As the cause of this he considers the fact that during the prodromal stage measles exerts great influence on the cellular exudation. The more severe the onset of measles, the more dangerous are the effects. But the activation is also dependent on the character of the tuberculous focus. The more predominating the exudative character, the greater is the tendency for activation, whereas in the proliferating stage activation is less likely. Young children and those in whom the tuberculous infection is recent are especially endangered. For these the author recommends vaccination.

Sarcomatous Tumor of Pleura in Child.—Neumann relates the clinical history of a girl, aged 2 years and 9 months. Three weeks previous to hospitalization the child had developed coryza, cough and fever, and the parents had noted shortness of breath, lack of appetite, loss of weight and unusually small quantities of urine. Exacerbation and the fear of pleural exudation or empyema led to hospitalization. Exploratory puncture yielded little blood but several whitish tissue shreds. The latter were deficient in fibers but contained many spindle cells and some atypical giant cells. A tumor was suspected and roentgenoscopy revealed a dense shadow extending over nearly the entire left half of the thorax. The heart and mediastinum showed considerable displacement toward the right. The case was diagnosed as extensive malignant tumor of the thorax. The girl's condition became rapidly worse and she died several days later. Postmortem examination and microscopy of the tumor revealed a spindle-cell sarcoma of the left costal pleura. The author classifies this tumor with the giant tumors of the

pleura, which so far have been reported only in adults. Since metastases and adhesions are absent in these tumors, they are suitable for surgical treatment.

Deutsche medizinische Wochenschrift, Berlin

59: 157-198 (Feb. 3) 1933

- Problem of So-Called Traumatic Encephalopathies. F. Kehrler.—p. 157.
*Specific Action of Ultrashort Waves. T. Reiter.—p. 160.
Gallstone Disease and Gastric Ulcer. R. Ehrmann.—p. 166.
*Glycine Treatment of Progressive Muscular Dystrophy. S. Kostakow and A. Slauck.—p. 169.
Dangers in Anesthesia of Urethra and in Urethrography and Their Prevention. A. Hendrick.—p. 171.
Stomatogenic Focal Infection and Dental Therapy. E. Feiler.—p. 172.
Infectious Pharyngeal Catarrh and Irritative Cough. R. von den Velden.—p. 174.
Action of Pure Alcohol on Gastric Motility. L. von Friedrich and G. A. Bokor.—p. 175.

Specific Action of Ultrashort Waves.—Reiter calls attention to the essential difference between the effect of ultrashort waves and diathermy. He points out that the ultrashort waves, that is, those of less than 15 meters in length, differ in their biologic action from the short waves that are longer than 15 meters. Wavelengths of more than 15 meters have a uniform deep heating effect, and those of less than 15 meters, in addition to this, are capable of selective warming of certain tissues. The author describes his investigations on the specific biologic effects of the ultrashort waves. First he discusses the so-called inflammatory stimulation effect. This effect becomes strong in wavelengths of 10 meters or less and is strongest in the wavelengths around 4 meters. The second biologic effect of the ultrashort waves investigated by the author was the influence on tumor tissues. In experiments on about 600 tumors in rats, he found that in the destruction of tumors a wavelength of 3.4 meters is most effective. He thinks that these actions of the ultrashort waves, besides having theoretical interest, also hold promise for the treatment of human carcinomas.

Glycine Treatment of Progressive Muscular Dystrophy.—Following introductory remarks about investigations conducted by others, Kostakow and Slauck report their own studies on the creatine-creatinine metabolism and its modification by glycine. They reach the conclusion that, in addition to phosphagen and lactic acid, glycine to a certain extent is a factor in the physiology of the muscles. Whether, besides influencing creatine formation, glycine has still other functions is as yet undecided. Metabolic studies convinced the authors that in muscular dystrophy the organism has lost the ability to utilize creatine. The organism regains this capacity under the influence of glycine. Thus glycine is of benefit in progressive muscular dystrophy, and the authors think that the treatment with glycine has prospects not yet realized.

Zeitschrift für Tuberkulose, Leipzig

66: 401-496 (Feb.) 1933

- Tuberculous Infection of School Children in Mansfeld. E. Kalle.—p. 401.
Investigation on Mineral Metabolism of Tuberculous Patients During Sauerbruch-Herrmannsdorfer-Gerson Diet. A. Herrmannsdorfer and A. Jung.—p. 407.
*Observations During Auscultation of Vowels Over Normal Pulmonary Tissue and Over Pulmonary Tissue with Tuberculous Infiltration. H. von Putkowsky.—p. 422.
History of Bilateral Pneumothorax. D. Hellin.—p. 431.
Partial Plastics in Pneumothorax, Also Remarks on Extrapleural Apicolysis as Aid in Pneumothorax Treatment. H. Kleesattel.—p. 434.
Clinical Aspects of Spontaneous Pneumothorax. G. Simsch and H. Schley.—p. 444.
Comparative Serologic and Chemical Experiments with Virulent Tubercle Bacilli and with Those of B.C.G. Marie Maxim.—p. 450.
*Tuberculosis Immunity and Complement Fixation. K. L. Pesch and P. Uhlenbruck.—p. 454.

Auscultation of Vowels over Lung.—Von Putkowsky shows that the capacity of the pulmonary tissues to conduct sound, which becomes manifest during the formation of vowels, is helpful in the determination of pathologic processes in tuberculous infiltration of the lung. The intensity of the bronchophony, by which this sound phenomenon is generally designated, permits inferences about the anatomic structure of the medium conducting the sound. After reviewing Helmholtz's vocal theory, the author explains the mechanism of sound conduction of the healthy and of the infiltrated lung. He found that the auscultation of the vowel E (German I) is most suitable for

testing the sound conduction capacity of infiltrated pulmonary tissues. In the course of several years he made comparative studies on a large material, comparing the roentgenologic aspects, the percutory resistance, the auscultation of the respiratory sounds and the sound conduction capacity of the pulmonary tissues during formation of the vowel E (German I). He found that the determination of the intensity of the resonance of the pulmonary tissues is a valuable aid to the other methods, that it facilitates rapid and clear orientation about infiltration and induration, and that in some cases it gives insight into the pathomorphologic processes.

Tuberculosis Immunity and Complement Fixation.—Pesch and Uhlenbruck show that Pesch's modification of the Neuberg-Klopstock complement fixation reaction for tuberculosis is an improvement of the method. Tests on 104 patients with tuberculosis revealed that the modification increased the positive results by 20 per cent. The reaction has a high degree of specificity and the authors think that a strongly positive reaction indicates pulmonary tuberculosis with considerable certainty, although a negative reaction does not exclude a tuberculous infection. The highest percentage (90.9) of positive reactions was observed in the exudative forms of pulmonary tuberculosis. In the early stages of tuberculosis, the positive reactions were much less frequent, and the lowest percentage of positive reactions was observed in the inactive forms, but in moribund and in active cirrhotic cases the incidence of positive reactions was considerably higher. In six cases of rheumatic polyarthritis, the reaction was clearly negative. The authors emphasize that a single test has no prognostic value.

Zentralblatt für Chirurgie, Leipzig

60: 305-368 (Feb. 11) 1933

- Experiences with Evipan-Sodium Anesthesia. K. Baucks.—p. 306.
- Puncture of Gasserian Ganglion. F. F. Härtel.—p. 310.
- Detoxin as Nonspecific Method of Treatment of Septic Conditions. J. Kroesen.—p. 315.
- Case of Complete Compression of Trachea by Myxoma of Neck. F. Hogenauer.—p. 318.
- Successful Method of Treating Ganglions. J. Fischer.—p. 320.
- Treatment of Acute Appendicitis. K. Sponheimer.—p. 321.
- *Fatty Pseudotumor Caused by Diathermy. F. Oehlecker.—p. 324.
- Traumatic Necrosis of Fat Tissue. W. Fischer.—p. 329.

Fatty Pseudotumor Caused by Diathermy.—Oehlecker reports three cases in which there developed, several weeks after diathermy, a tumor-like mass in the deep subcutaneous fatty tissue. The mass was well circumscribed, round, painless, and the size of a walnut. The patients did not experience a sense of unusual heat. The swelling was considered to be a tumor or a hernia. The macroscopic appearance after excision revealed the true nature of the swelling; it consisted of altered fatty tissue. The author believes that the relative insensitiveness of the fatty tissue was responsible for the fact that the patients did not experience the heat. Because fatty tissue is a poor conductor, the development of heat as a result of resistance to the passage of the current appears theoretically possible. The author raises the question of the possibility of injuring the mesentery in diathermy treatment of the abdominal wall.

Zentralblatt für Gynäkologie, Leipzig

57: 129-192 (Jan. 21) 1933. Partial Index

- Results with Sacral Anesthesia. W. Haupt and R. Kraus.—p. 129.
- Traumatic Postoperative Apoplexy of Pelvic Organs. B. Ottow.—p. 142.
- *Diagnosis and Treatment of Inflammatory Diseases of Genitalia and of Puerperal Fever by Specific Vaccine. A. Mandelstamm and M. Teverowsky.—p. 146.
- *Chorio-Epithelioma and Aschheim-Zondek Reaction. E. Balkow.—p. 159.
- Spontaneous Circular Separation of Portio Vaginalis During Labor. Anne Schmitz.—p. 165.
- Thymophysin and Intra-Uterine Asphyxia. R. Luh.—p. 166.
- Induction of Labor Through Puncture of Amniotic Bag. M. Berger.—p. 178.

Inflammatory Diseases of Genitalia.—Mandelstamm and Teverowsky state that recognition of the exciting organism in inflammatory diseases of the genitalia and of its port of entry can be obtained by the application of Bourlakov-Kandyba's method of regional intramucous injection (cervix, vagina or rectum) of various vaccines, such as gonococcus, streptostaphylococcus or colon bacillus vaccine. The reaction is specific. It appears in from fifteen to twenty minutes in gonorrheal, in from one-half hour to three hours in streptostaphylococcal and in from

six to fifteen hours in colon bacillus infections. In from 70 to 90 per cent of the cases of gynecologic and puerperal infections the specific exciting cause can be established by the use of intracutaneous injection of various vaccines. In puerperal infections without localization in the true pelvis, this is the only specific method of diagnosis. In the presence of positive regional or skin reactions, repeated injections of the corresponding vaccine proved to be a specific in the treatment of genital and puerperal infections. The mechanism of the diagnostic as well as of the therapeutic effect of the vaccines depends on the activation of the reticulo-endothelial system and on the increased fermentative action of reticulo-endothelial elements on the exciting micro-organism.

Chorio-Epithelioma and Aschheim-Zondek Reaction.—Balkow states that the recent literature points to the fact that the Aschheim-Zondek reaction is almost always positive in the presence of a chorio-epithelioma. This is equally true for primary tumor and for the metastases after the removal of the primary tumor. Aschheim advised that examination of urine for the presence of the hormone be carried out along with other examinations in every suspected case of chorio-epithelioma. He likewise suggested that the test be repeated after the expulsion of a hydatid mole, as well as after an operation on or irradiation for chorio-epithelioma, in order to detect the earliest metastases. The author points out the difficulty in surgical indication when the histologic examination and the hormonal test disagree. He reports two cases of malignant chorio-epithelioma. In one case both the histologic examination of uterine scrapings and the Aschheim-Zondek test were positive before the operation. In the second case the histologic examination was negative, but, because of several strongly positive urinary tests, an early operation was carried out. In both cases, repeated examinations of urine for the presence of the anterior lobe pituitary hormone were negative and no clinical manifestations of recurrence were present. The author concludes that operative intervention is indicated in all cases of suspected malignant chorio-epithelioma if the Aschheim-Zondek test is positive even in the presence of a negative microscopic examination.

Hygiea, Stockholm

95: 1-32 (Jan. 15) 1933

- *Botulism and Ichthyismus Neuroparalyticus. W. Mascher and O. Gabinus.—p. 1.
- Contribution to Knowledge of Vitamin C Standard of Swedish School Children. G. Lindberg.—p. 10.

Botulism and Ichthyismus Neuroparalyticus.—In the case of ichthyismus neuroparalyticus described by Mascher and Gabinus, general and gastro-intestinal symptoms set in about ten hours after the consumption of cooked fish, which had been standing for a week, and were followed by paralysis of accommodation, the abducens nerves and the throat, with dryness of the mouth and constipation. While a distinct improvement in the paralyses was noted after botulism antitoxin intramuscularly, a fatal aspiration pneumonia developed. Botulism toxin was established in the blood. Inoculation of the patient's serum in mice resulted in typical paralyses, but no symptoms appeared after the injection of a lethal dose of patient's serum simultaneously with botulism antitoxin.

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Varices and Sequels.—In 10 of the 124 cases of varices reported by Poulsen, injection treatment was used as an adjuvant to otherwise conservative treatment, and in 105 conservative treatment was given after injection treatment performed elsewhere; the remaining 11 cases, observed several times at intervals of years, are illustrative of exclusively conservative treatment consisting of compression and, in cases with edema, of massage, carried out by the patient himself. In the author's opinion the ambulant conservative treatment of varices and resulting conditions should give place to operative intervention in exceptional cases only.

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THE SIGNIFICANCE AND TREATMENT OF SCIATIC PAIN

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Sciatica, or more properly sciatic pain, has always been of importance clinically not only because of its prevalence and its resistance to treatment but because it may be a symptom of so many disease entities. The treatment of sciatic pain of uncertain origin has been complicated by the search for a single therapeutic procedure of sufficient potency to produce immediate and complete relief in all cases. Apparently such a procedure has been difficult to find, for of the various types of treatment reported in the literature not one has had universal success. After analyzing the different methods of treatment for sciatica at the Mayo Clinic, it is evident that the different procedures can be combined into two methods, the ambulant and the institutional, with satisfactory results in a fairly high percentage of cases. Cooperation of orthopedists, neurologists and neurosurgeons has made it possible to correlate the results, and we are presenting them as a possible solution to the problem.

The sciatic nerve is the longest nerve in the body, arises from the primary divisions of the fourth and fifth lumbar nerves and the first and second sacral nerves, and is subjected to trauma, strain and distortion. It would seem reasonable, therefore, to expect that many irritative factors contribute to cause pain in this region.

The term sciatica evidently was evolved from the term "ischias," which was used by the ancients in referring to all painful conditions of the thigh and hip, and consequently there is a tendency to include many irrelevant conditions under this nomenclature. Feiling¹ probably expressed the modern attitude in stating that one should think of this term as merely signifying sciatic pain without allowing it to connote any particular pathogenesis. It has been customary to divide all sciatic pains into two groups. In the primary group have been placed all the so-called idiopathic cases, or those in which the pain is apparently due to pathologic processes involving the nerve itself. In the second group have been placed all cases in which discomfort is due to factors affecting the bony and muscular structures primarily, and in which the nerves are involved secondarily.

From the Section on Neurologic Surgery, and the Section on Orthopedic Surgery, the Mayo Clinic.

1. Feiling, Anthony: Sciatica: Its Varieties and Treatment, Brit. M. J. 1: 386-390 (March 10) 1928.

Sciatic pain for which no causative factor is apparent can be initiated in various ways. There may be a definite history of trauma, either a fall or a strain, and the pains often appear after exposure. Working in the rain, wading in cold streams, working in damp mines, or exposure to cold, may be followed by severe pain limited to the region supplied by the sciatic nerve. Sometimes there is pain low in the lumbar or sacral region, associated with the sciatic pain, which may either persist or disappear, leaving a residual pain in the thigh and leg. In some cases no predisposing factor can be found.

From the reports in the literature, it seems evident that there are very few cases of primary sciatic pain, and, according to Goldthwait,² Danforth and Wilson,³ Grossman and Keschner,⁴ Sicard,⁵ Putti⁶ and others, it would appear that the condition of the majority of patients suffering from sciatic pain can eventually be classified as secondary sciatica.

From a diagnostic standpoint, it is important to determine the underlying causes of sciatic pain. Among the first of these which should be considered are the constitutional or systemic causes, which include conditions such as diabetes, syphilis and gout, and the forms of toxic neuritis which develop secondary to absorption of alcohol, lead or arsenic.

Tumors of the spinal cord have been known to cause unilateral sciatic pain for many years before the development of additional symptoms which would indicate the diagnosis. In cases in which bilateral sciatic pain eventually develops, as well as in those in which the pain is severe enough to necessitate the giving of morphine, the presence of a tumor of the spinal cord or meninges, involving either the lower end of the cord or the cauda equina, should be suspected.

Neurofibromas along the course of the sciatic nerve may give rise to sciatic pain, difficult to classify unless the nerve is carefully palpated throughout its course. Sometimes café au lait discolorations of the skin or fibroma molluscum of the skin may indicate the presence of such tumors.

Metastatic tumors, or pelvic tumors, compressing the lumbosacral plexus and arising from the uterus and adnexa or from the prostate gland, may have as their initial symptom unilateral sciatic pain, and for this reason pelvic or rectal examination is of extreme importance.

Occasionally, in vascular diseases, such as thromboangiitis obliterans or arteriosclerosis, a sciatic syndrome develops and a difference in the surface temperature of the two lower extremities should indicate some vas-

2. Goldthwait, quoted by Danforth and Wilson.³
3. Danforth, M. S., and Wilson, P. D.: The Anatomy of the Lumbosacral Region in Relation to Sciatic Pain, J. Bone & Joint Surg. 23: 109-155 (Jan.) 1925.

4. Grossman, Morris, and Keschner, Moses: The Sciatic Syndrome, Arch. Neurol. & Psychiat. 21: 398-411 (Feb.) 1929.

5. Sicard, J. A.: Traité de pathologie médicale, Paris 2: 82, 1921.

6. Putti, Vittorio: Sciatica: Its Cause and Treatment, Brit. M. J. 1: 522 (March 19) 1927.

cular inequality. Patients have come under our care who seemed to have a spastic condition affecting the inferior gluteal (sciatic) artery, which caused the sciatic pain and was associated with coldness of the extremity. Following intravenous injection of typhoid vaccine, the temperature of the two legs became equal and the pain disappeared.

Sicard has suggested that idiopathic or primary sciatica is caused by inflammatory reactions about the roots which go to form the sciatic nerve. He employed the terms "neuritis" when referring to the nerve beyond the trunk, "trunkitis" when referring to the nerve trunk, "plexitis" when referring to the nerve plexus, "funiculitis" when referring to that part of the nerve root between the ganglion and the plexus, and "radiculitis" when referring to that part of the posterior nerve root within the dura. In addition to this terminology, he employed another term, "neurodocitis," which indicates an inflammatory condition of the intervertebral bony canal through which the nerve passes. These suggestions are in keeping with the ideas of Danforth and Wilson, as well as of MacKinnon,⁷ and support the contention that the number of conditions which can be classified as primary sciatica is proportionately small.

Moersch⁸ divided sciatic pains into true sciatic neuritis, a clinical entity which is a true peripheral neuritis, and symptomatic sciatica (erroneously called sciatica), symptomatic of a pathologic process directly or indirectly affecting the sciatic nerve.

According to Putti's conception, sciatic pains are caused either by a central lesion or by arthritis of the spinal column involving the nerves traversing the foramina or distal to the ganglions. The central variety, according to his studies, can always be distinguished by means of good lateral and stereoscopic roentgenograms. The peripheral variety corresponds to Moersch's peripheral type, or true perineuritis.

Danforth and Wilson have suggested that the majority of sciatic pains of indeterminate origin are caused by disproportion between the size of the intervertebral foramina of the lumbar region and of the fourth and fifth lumbar nerves. They have demonstrated that the fourth and fifth intervertebral foramina are smaller than the others and that the nerves so completely fill the available space that they are rendered susceptible to any friction, inflammation or trauma which intimate contact with the bone might bring about. In addition, Danforth and Wilson emphasized the fact that anatomically the root of the fourth lumbar nerve is susceptible to disturbance at the lower margin of the sacro-iliac joint, in the greater sciatic notch. The root of the fifth lumbar nerve, in addition to being affected within the intervertebral canal, is exposed to disturbances at the lateral margin of the joint between the body of the fifth lumbar vertebra and the sacrum, and also at the lower margin of the sacro-iliac joint.

MacKinnon, who corroborated the anatomic studies of Danforth and Wilson, has gone a step further and has stated: "All of the features of idiopathic or primary sciatica can be accounted for by infectious, lumbosacral arthritis."

The various anomalies and diseases of the lumbosacral vertebrae from time to time have been accused of being the causative factors in the production of sciatic pain. These anomalies may roughly be divided into those of the spinous processes and laminae, those of

the articular facets, those of the transverse processes, and those of the vertebral bodies. In our experience anomalies of the spinous processes and laminae, the so-called spina bifida or spina bifida occulta, are rarely the cause of sciatic pain. Anomalies of the articular facets in themselves are seldom causative factors, yet they may lead to changes which may contribute to the production of sciatic pain in two ways: (1) many cases of spondylolisthesis are accompanied by sciatic pain, and most cases of spondylolisthesis are superimposed on anomalies of the articular facets; (2) arthritic changes in the articular facets, secondary either to trauma or to infections, although hard to demonstrate in the roentgenogram, are no doubt present in many cases of pain low in the back, as can be demonstrated easily in an examination of skeletons. It should be pointed out, too, that the margins of these facets border on the intervertebral foramina, so that irritation of the nerve root, or even encroachment on the nerve space, may be produced.

The most common anomaly of the transverse process is sacralization of the fifth lumbar vertebra. In many of these cases there is complete bony fusion between the transverse process and the sacrum. A more stable joint may result, but it is difficult to understand how irritation of the sciatic roots would follow. In some instances the fusion is not solid but apparently consists in a synchondrosis which may produce changes such as to irritate the sciatic nerve, but this must be regarded as rare.

Anomalies of the vertebral bodies are seen in the more severe types of congenital defect and may or may not accompany myelodysplasia; neurologic changes may be demonstrated, but they are more extensive than in the usual type of sciatica. Hence, anomalies cannot be regarded as the cause of sciatic pain except in rare instances.

Lumbosacral strain or arthritis is the second possible causative factor. In these cases, changes in the articular facets or in the lumbosacral intervertebral disks may be responsible. We have already indicated the changes that may take place in the articular facets and have considered their probable importance in this connection. Changes in the disk are more often in the nature of thinning, possibly with secondary fibrosis of the cartilage, and disappearance of the nucleus pulposus. This leads to narrowing of the space between the fifth lumbar vertebra and the sacrum, and consequent diminution in the size of the intervertebral foramen, which must in many cases cause irritation of the roots of the sciatic nerve. The importance of this has lately been shown by Williams.⁹

Finally, the sacro-iliac joints are often pointed out as the causative factor in sciatic pain. It is a little more difficult satisfactorily to explain sciatic pain accompanying sacro-iliac disturbances than it is to explain the same pain on the basis of a lumbosacral condition. That sciatic pain does occur in connection with sacro-iliac pain is doubtless true. Often sciatic pain has been known to disappear following successful fusion of the sacro-iliac joint. Smith-Petersen¹⁰ has explained this on the basis of a reflex mechanism. Others have stated that the nerve runs close enough to the joint to be irritated by any factor in the joint itself. This is very doubtful, for the nerve is not close enough to the sacro-iliac joint to be affected directly by irritation of the latter. The fact that sciatic pain does occur in sacro-iliac conditions

7. MacKinnon, A. P.: *Sciatica*, *Canad. M. A. J.* **22**: 492-498 (April) 1930.

8. Moersch, F. P.: *Sciatic Pains and Their Differentiation*, *Mil. Surgeon* **60**: 562-572 (May) 1927.

9. Williams, P. C.: *Reduced Lumbosacral Joint Space: Its Relation to Sciatic Irritation*, *J. A. M. A.* **99**: 1677-1681 (Nov. 12) 1932.

10. Smith-Petersen: Personal communication to the authors.

must be accepted, however, although it cannot as yet be explained satisfactorily.

Sciatic pain secondary to tumors of the lumbar portion of the spinal column and of the sacrum, as well as of the ilium, is not uncommon. The tumors may be either benign or malignant; some of the most intractable types of sciatica are caused by metastatic malignant tumors.

Information revealed by examination of the cerebrospinal fluid is sometimes very important in the diagnosis. Changes in pressure of the cerebrospinal fluid, following compression of the jugular veins, may determine the presence or absence of a tumor or another factor causing compression. The cellular content of the cerebrospinal fluid may indicate the presence or absence of inflammation about the filaments of the cauda equina (such inflammation causes the high sciatica of Sicard), and the mere change of intraspinal pressure may produce palliation. In addition to cases reported by others, we have seen several cases in which complete relief of pain has occurred following lumbar puncture. Although it is not feasible to recommend spinal puncture in all cases of symptomatic sciatica, yet a thorough investigation may demand it, and it has a therapeutic effect in some cases. Sciatic pain seldom occurs among children; the youngest patient in our series was 21 years of age and the oldest 70; the percentage of men was 72 and of women, 28.

METHODS OF TREATMENT THAT HAVE BEEN SUGGESTED

Injections into the sciatic nerve have been regarded as a specific remedy for the relief of sciatic pain, and some authors have reported as high as 100 per cent of cures. Hertzler¹⁰ reported a series of cases in which he injected 1 ounce (30 cc.) of 1 per cent solution of quinine and urea hydrochloride into the nerve at the point where it crosses the neck of the femur, without failures or recurrences, and with only one unfavorable result. Feiling recommended that in cases in which there is no response to the more conservative methods of treatment, physiologic solution of sodium chloride should be injected into the nerve. He used about 100 cc. of fluid and quoted Harris in recommending two points of injection: one just above the sacro-iliac notch, and the other at the level of the tuberosity of the ischium. Feiling also stated that the injection of oxygen along the nerve trunk was a curative measure.

Sicard¹¹ has always favored epidural injection of solutions in cases of his so-called high sciatica and has reported favorably on this type of treatment. Since he began this method, others have reported relief in percentages of cases varying from 40 to 70. Evans,¹² in 1930, reported relief or cures in 60 per cent and Ott,¹³ in 1922, in 66 per cent. Various solutions have been used. Sicard used procaine hydrochloride in physiologic solution of sodium chloride and Feiling a 40 per cent solution of antipyrine.

Labat and Greene¹⁴ have advocated paravertebral injections of the affected nerves with a solution of alcohol and neocaine (procaine hydrobromide). They distinguished the nerves causing the painful stimulus by means of an electric percussion hammer.

Injection of the sciatic nerve with saline solution, alcohol and other substances may bring about immediate relief of pain in certain cases, but blind injection of any nerve entails the danger of producing a hematoma which may be followed by motor and sensory changes. We agree with Stookey¹⁵ that in dealing with such an uncertain clinical quantity as sciatic pain it is much better to obtain relief in a more conservative manner than to risk the production of paralysis and anesthesia.

Sicard also has reported beneficial results from roentgenotherapy; Ford¹⁶ reported several cases in which there was apparent relief following this form of treatment. Taylor¹⁷ has described a rather radical but apparently successful surgical procedure for the more chronic types of peripheral neuritis which prove resistant to other forms of treatment. He exposed the sciatic nerve as high as the gluteal fold and dissected it free from adhesions to the surrounding structures, being careful not to stretch or otherwise injure the nerve.

Intravenous injection of foreign protein was suggested and tried in 1918 by Hölzl¹⁸ who instituted treatment in twenty-five cases of sciatica and obtained relief in sixteen. Previously, in 1914, Döllken¹⁹ had used foreign protein in the treatment of neuritis and had noted that the "pressure neuralgias" and the "rheumatic palsies" responded best. Injections of proteins comprised part of the usual treatment of patients with arthritis, and their use in the treatment of sciatic pain caused by arthritic changes about the intervertebral foramina, lumbar vertebrae or sacro-iliac joint would seem logical in attacking the irritative inflammatory reaction about the nerve trunk.

Henderson²⁰ and Phelps²⁰ have employed manipulation under anesthesia, followed by immobilization, with success in the more stubborn cases. Ghormley²¹ has reported immediate relief of symptoms following enlargement of the fifth intervertebral foramen by resection of a portion of the articular facets. Putti advised that immobilization in plaster-of-paris casts, followed by the induction of hyperemia, should be used in cases of sciatica; after nine to twelve months of treatment, if the pain is not relieved, the posterior walls of the intervertebral foramina are removed.

Boncina²² treated the primary types of sciatica with counter-irritant ointments and reported excellent results in a group of cases. Lewin²³ evidently supported the hypothesis of an inflammatory cause, in view of the fact that he treated patients having sciatica by absolute rest in bed, strapping the back, traction on the leg, heat, and use of a sacro-iliac belt after two to four weeks.

The pain may be constant or paroxysmal and is often exaggerated by exercise or becomes worse after the patient has been sitting for a period of time. It is strange that the pain which occurs when the patient is in the sitting position is often relieved when the patient moves about. The pain caused by tumors of the spinal cord may be relieved by exercise, but it usually occurs during the night, necessitating arising from

10. Hertzler, A. E.: The Nature and Treatment of Sciatica, *Am. J. Surg.* 1: 260-267 (Oct.) 1926.

11. Sicard, M. A.: Les injections médicamenteuses extra-durales par voie sacrococcygienne, *Compt. rend. Soc. de biol.* 53: 396-398 (April 20) 1901.

12. Evans, William: Intracanal Epidural Injection in the Treatment of Sciatica, *Lancet* 2: 1225-1229 (Dec. 6) 1930.

13. Ott, W. O.: Results of Treatment in Forty-Eight Cases of Sciatica, *Ann. Surg.* 78: 272-276 (Aug.) 1922.

14. Labat, Gaston, and Greene, M. B.: Diagnosis and Treatment of the So-Called Sciatic Neuralgias, *Am. J. Surg.* 11: 435-451 (March) 1931.

15. Stookey, Byron: Surgery of the Nerve, in Nelson's Loose Leaf Surgery, New York, Thomas Nelson & Sons 2: 463-612, 1927.

16. Ford, Frances A.: Roentgenotherapy in Certain Types of Neuritis and Neuralgia, *Minnesota Med.* 11: 368-374 (June) 1928.

17. Taylor, W. J.: Surgical Treatment of Chronic Sciatica, *New York M. J.* 116: 693-696 (Dec. 20) 1922.

18. Quoted by Petersen, W. F.: Protein Therapy and Nonspecific Resistance, New York, Macmillan Company, 1922.

19. Henderson, M. S.: Personal communication to the authors.

20. Phelps, Winfield: Personal communication to the authors.

21. Ghormley, R. K.: The Operative Treatment of Painful Conditions of the Lower Part of the Back, *Proc. Staff Meet., Mayo Clin.* 6: 112-113 (Feb. 25) 1931.

22. Boncina, Eugenio: Sciatica, *M. J. & Rec.* 131: 395-398 (April 16) 1930.

23. Lewin, Philip: The Orthopedic Treatment of Symptomatic Sciatica, *J. A. M. A.* 82: 965-966 (March 22) 1924.

bed and sometimes sitting in a chair the remainder of the night. Sciatic pain may be constant and last for weeks, months, and even years. Recovery may be spontaneous, and the patient may be free from pain for an indefinite period.

This type of sciatic pain is often referred to as "sciatic scoliosis" because of the frequency with which it is accompanied by scoliosis. Sciatic scoliosis is in most cases caused by the violent protective muscle spasm which is set up to pull the spinal column toward, or usually away from, the affected side. It may remain for months, or it may clear up in a few days with or without the disappearance of the sciatic pain. The primary condition may have occurred in the sciatic nerve, faulty posture resulting from attempts to protect the nerve and avoid stretching it. Stookey stated as his belief that the scoliosis may be symptomatic, and assumed in order to relieve the pain of true sciatic neuritis. The primary postural difficulties, however, may give rise secondarily to sciatic pain, with the primary cause in the sacro-iliac joint or the lumbosacral joint. Eventually the postural difficulty may produce painful signs of its own, even though originally secondary. Likewise, primary postural difficulties may in time produce pain in the distribution of the sciatic nerve.

METHODS OF TREATMENT EMPLOYED AT THE MAYO CLINIC FOR AMBULANT PATIENTS

For the purpose of study we have taken consecutive cases of sciatic pain in which no obvious pathologic condition could be found, and, instead of attempting to divide them into clinical groups, we have studied the results of treatment. Many remedies have been tried, following which the pain has been relieved, but it has been our experience that there is no one remedy suitable for all cases regardless of the symptoms. The economic aspect of sciatic pain presents a special problem, for the patients are usually not completely incapacitated and yet are not able to work on account of the pain. This fact immediately creates the possibility of ambulatory treatment as well as institutional treatment. Grossman and Keschner advised immediate hospitalization in all cases of sciatic pain, and placed great emphasis on rest and immobilization. Frequently it is economically impossible for the patient to remain in the hospital for any length of time. This, of course, brings up the question of suitable treatment to meet the economic status of the patient, and we have reviewed this series of cases with the idea of analyzing the possibilities of ambulatory treatment, and of shortening the patient's stay in the hospital. We have sought for the most efficient single method or combination of methods of treatment which would result in a maximal amount of relief. There is no doubt that rest in bed will bring relief in many cases of sciatic pain caused by irritation.

In many of our cases, orthopedic measures have been combined with epidural injection. In cases in which hospitalization has seemed wise, the rest in bed should be regarded as one of the most valuable phases of the treatment, if not the most valuable. The usual procedure is to have a large panel of boards placed over the springs and under the mattress in order to remove the sagging effect of the springs. It is also advisable not to use inner coil spring mattresses, but to use one or two hair mattresses. A hard bed should not be insisted on even if the patient states that it is comfortable. If it does not seem to relieve the symptoms the type of mattress should be changed or the boards removed, for relief of pain is desired above all else.

Buck's extension is applied to both legs, and weight of from 8 to 10 pounds is used. This often relieves the pain, but in many cases the weight cannot be tolerated constantly and must be used intermittently. Often the pain is exaggerated for the first day or two, and it may take a good deal of tact to persuade the patient that he is not being made worse. However, often by the end of the third or fourth day, patients feel somewhat improved and are content to stay in bed for from ten days to two or three weeks, which is the usual time of hospitalization. In addition, a lumbar sling to support, or in many cases restore, the normal lordosis will be found of help. Often it cannot be tolerated more than a few hours at a time, until spasm of the muscle has subsided.

Besides these forms of fixation and traction, daily physical therapy, consisting of diathermy or baking and massage, is given. A few patients will complain that diathermy makes the pain worse. In some instances in which baking seems of value we have kept the patient under a baker for two or three hours, or even longer, each day. Judgment must be exercised in selecting the type of physical therapy, such judgment to be guided by the patient's reaction to the treatment. In many cases of long-standing sciatic pain, when marked muscular atrophy has taken place and the sciatic pain has subsided, it is valuable to institute graduated exercises of the muscles affected in order to restore muscular tonus.

The ambulatory types of treatment are modified only as to the method of fixation. Some form of support for the lower portion of the back and pelvis should be prescribed in most cases after hospital treatment, and it helps many patients who receive only ambulatory treatment. For men, a canvas belt, fitted carefully around the pelvis and extending above the crests of the ilia, laced or buckled both in front and behind in order to be more readily adjustable, is of value. In many cases a pad of leather and felt fitted over the sacrum (Cook shingle) gives better support. For women, such a belt may be used or, what appeals to most women, a well fitted cloth corset. The support must be accurately fitted. In most instances a corset laced in the back can be adjusted better than other types, is more adaptable, and serves the purpose better. In other instances a corset laced in front, with or without a sacral pad, is more suitable. In cases in which there is lumbar ache, the corset must extend high enough to give the effect of splints to the lumbar portion of the spinal column.

Epidural Injection.—The benefit of epidural injection has never been explained satisfactorily, except that this procedure may separate adhesions about the nerve roots and relieve the inflammatory reaction by soothing and irrigating the tissues. Single or multiple epidural injections have been accredited with relieving a great number of patients suffering from sciatic pain, and our experience substantiates this to a certain extent. Epidural injection (caudal block, extradural or epidural block) was used by Cathelin²⁴ and Sicard as early as 1901 and since that time has become accepted as one of the standard therapeutic measures for sciatica from undetermined causes. Unfortunately, this procedure does not give relief in all cases and therefore should be considered as only one form of treatment. It consists of the injection of certain solutions into the sacral canal, through the sacral hiatus, thus depositing the fluid within the epidural space.

24. Cathelin, M. F.: Une nouvelle voie d'injection rachidienne, *Compt. rend. Soc. de biol.* 53: 452-453 (April 27) 1901.

Various solutions have been recommended for relief of sciatic pain. Physiologic solution of sodium chloride is commonly used, but weak solutions of certain analgesic drugs seem to give the best results. Feiling recommended a 40 per cent solution of antipyrine. Because it is likely that most of the resulting benefit is due to stretching of the nerve roots, Brain and Strauss,²⁵ advised injection of 20 cc. of a 1 per cent solution of procaine hydrochloride followed by from 60 to 80 cc. of sterile physiologic solution of sodium chloride. Our most satisfactory results have followed injection of from 40 to 60 cc. of a 1 per cent solution of procaine hydrochloride, and in stubborn cases a 2 per cent solution has been used. Often injections produce exacerbation of the pain during injection, but the procedure is followed by early and permanent relief. When but partial relief follows one injection, a second, third or fourth may be made, with an interval of one day between injections.

Reactions to the injection differ. Sometimes a "procaine reaction" may be observed during which there is a subjective impression of fainting and vertigo. Should this be severe, the injection should be stopped. Serious reactions have never been reported.

Because of the immediate and striking relief that occurs in some cases of sciatic pain, epidural injection has been accorded a most enviable place in the therapeutic field. However, because of our failure to predicate from a diagnostic standpoint the cases in which a maximal amount of benefit would be derived from the measure, we have used it not only for its therapeutic value but also as a diagnostic measure, and for a time we subjected to it all patients with sciatic pain as a routine.

Complete and permanent relief was obtained in 52 per cent of a group of eighty ambulatory patients treated by epidural injection. The patients were kept in bed for twenty-four hours following the injection. Another 24 per cent of the patients were partially relieved, but further treatment was required before relief became permanent. Twenty-two per cent were not relieved. In the group in which complete relief was obtained, the symptoms had been present for from three weeks to eighteen years. The ages of the patients varied from 22 to 59 years; 80 per cent were men and 20 per cent were women.

It was noted that 34.5 per cent of the patients who were relieved by epidural injection had pain low in the back associated with sciatic pain; the pain of 61 per cent was confined to the thigh and leg, and only 5.5 per cent complained of pain limited to the leg. The left leg was affected in 57 per cent of the cases, and the right leg in 43 per cent; the reason for this difference was not apparent.

Whenever the general examination revealed evidences of foci of infection, these were treated concomitantly, because, in a number of cases in which infection had not been eliminated, relief of the pain by epidural injection was followed by recurrence in a few months. In these cases, however, permanent relief followed elimination of foci and a second epidural injection.

From the diagnostic standpoint, it was noted that in 28 per cent of the cases in which there was response to epidural injection there was definite roentgenographic evidence of hypertrophic arthritis involving the lower lumbar and sacral vertebrae and the sacro-iliac joints. There was roentgenologic evidence of spina bifida

occulta in 4 per cent of the cases, involving the first and second sacral vertebrae.

In view of the fact that epidural injection has been advocated for patients without abnormal reflexes and has been of questionable value when these changes were present, it was interesting to note that there was areflexia in 34.7 per cent of these cases, and the achilles, hamstring, and patellar reflexes were most often involved. In addition, there was one case in which the pain was so extreme that the thigh could not be extended; after the first injection the condition was greatly improved, and following the third injection it was completely relieved.

When epidural injections are followed by partial relief, they should be repeated, an interval of one day being allowed between injections. In our group it was found that a maximal amount of relief occurred in 50 per cent of cases after one injection; in 16 per cent, relief was obtained after two injections, and in 8 per cent it was necessary to inject three times or more.

In reviewing this group, it becomes evident that epidural injection deserves consideration in the ambulatory treatment for indeterminate sciatic pain of patients to whom hospitalization would be an economic hardship or impossibility, or of older patients to whom confinement in bed would be a distinct danger.

Diathermy.—In view of the fact that the condition of only 52 per cent of the ambulatory patients was completely relieved by epidural injection, we were interested in comparing the results with those from other methods of treatment. A series of thirty-six consecutive cases in which the patients received daily treatment by diathermy was reviewed. In this group it was found that twelve (33 per cent) of the patients were entirely relieved of pain. The duration of symptoms covered periods of from sixteen years to one month. In this group there were twenty women and sixteen men; the oldest was 78 years of age, and the youngest 24. Four of the patients who were relieved presented roentgenologic evidence of hypertrophic arthritis of the lumbar vertebrae or sacro-iliac joints, and one gave evidence of sacralization of the fifth lumbar vertebra. One patient gave a history of trauma, consisting of a fall on ice, which initiated the pain. One patient who previously had lost the achilles reflex was completely relieved. Three of the patients had infected tonsils which were removed during the treatment, and a periapical focus was removed from one patient.

Epidural Injection and Diathermy.—These methods were combined in the treatment of twenty-four cases without hospitalizing the patients for a longer time than was necessary for the treatments. There were three cases in which the patellar reflexes were diminished to —2, and the achilles reflexes were diminished to the same degree. In this group, nine (42 per cent) obtained complete relief. Thirteen of the patients were men and eight were women. The oldest was 42 years of age, and the youngest 23. The longest duration of pain was five years, and the shortest was two months. Roentgenologic evidence of hypertrophic arthritis was observed in one case, and in three cases there was a history of trauma, consisting respectively of a fall from a truck, a fall from a railroad car, and a fall on the floor striking the back.

Sacro-Iliac Belt and Diathermy.—We investigated the results of support by means of the sacro-iliac belt and daily treatments with diathermy. In this group there were fifty-two patients. In four cases the achil-

25. Brain, W. R., and Strauss, E. B.: *Recent Advances in Neurology*, Philadelphia, P. Blakiston's Son & Co., 1929.

les and patellar reflexes were abolished. Seventeen patients (32.6 per cent), nine men and eight women, obtained complete relief, and seven others were moderately relieved. The oldest patient relieved was 74 years of age and the youngest 23. The longest history of symptoms was nine years, and the shortest was two months. In four cases there was roentgenologic evidence of hypertrophic arthritis of the lumbar vertebrae or sacro-iliac joints. In three cases, foci of infection were found and eliminated.

Epidural Injection, Sacro-Iliac Belt and Diathermy.—Realizing that each of the ambulant forms of treatment was followed by complete relief in some but not in all cases of sciatic pain, we investigated the results from a combination of the three methods. Fourteen patients were thus treated. The achilles reflexes were abolished in two cases. Twelve patients (85 per cent) were completely relieved. In the cases in which treatment was successful, it was found that the longest duration of symptoms was six years, and the shortest three weeks. The oldest patient was 44 years of age, the youngest 26. In only one case was there roentgenologic evidence of arthritis, and in only one was there sufficient evidence of infection of the tonsils to warrant their removal. In two other cases there was associated scoliosis which was relieved by treatment.

METHODS OF TREATMENT EMPLOYED AT THE MAYO CLINIC FOR PATIENTS CON- FINED TO BED

Rest in Bed, Epidural Injection, Diathermy, Buck's Extension, Intravenous Injections of Foreign Protein, and Elimination of Foci of Infection.—Realizing that the ambulatory treatment, although advantageous to aged patients and to others, for economic reasons, produced rather uncertain results, we adopted a combined hospital treatment for patients who wanted intensive treatment and more certain relief. This consisted of rest in bed for a period of from ten days to three weeks, with Buck's extension; epidural injection; daily treatment by diathermy, and repeated injections of foreign protein in the form of typhoid vaccine. In addition, foci of infection were eliminated by tonsillectomy or alveolotomy, and prostatitis was treated until the subject was relieved. This series included twenty-eight cases. In five cases the achilles or patellar reflexes were abolished, and in five others there was roentgenologic evidence of associated arthritis, involving the lumbar vertebrae or sacro-iliac joints. All patients obtained some relief. Only twenty-four (85.7 per cent) could be considered completely relieved, and the other four were moderately relieved. One of the patients who had been suffering from intermittent attacks of sciatic pain for a period of five years was examined two years after undergoing treatment; he had had no recurrence. In this group the oldest patient was 65 years of age and the youngest was 26. Of the seventeen patients who were completely relieved, there were nine who had pain in the back in addition to the sciatic pain. Eight of them gave a history of trauma, consisting variously of a wrenched back, injury in the wrecking of an automobile, lifting heavy objects, and straining while playing golf or tennis. There were seven cases in which severe scoliosis was also relieved. In six of these cases, foci that necessitated treatment were found.

Rest in Bed, Diathermy, Buck's Extension, Intravenous Injection of Foreign Protein and Elimination of Foci of Infection.—For comparison, another series

of patients was observed, in which epidural injection had not been included in the combined form of treatment. There were thirty cases in this group. In six, patellar and achilles reflexes were abolished. In nineteen cases (63 per cent) pain was completely relieved. In seven other cases there was moderate relief. The oldest patient was 59 years of age, and the youngest 24. The longest duration of symptoms was five years, and the shortest six weeks. This was an interesting group, for there were ten cases in which associated pain in the back was present, and this was relieved. Four patients had foci of infection which were treated simultaneously with the sciatic pain. Associated scoliosis was present in five cases and was relieved. In five cases there was roentgenologic evidence of hypertrophic arthritis.

Other Forms of Treatment.—The more radical forms of treatment of sciatic pain definitely associated with low backache are beyond the scope of this paper. It is to be pointed out, however, that some patients who do not respond to the outlined forms of treatment may respond to manipulations under anesthesia, followed by the use of a plaster spica cast. These patients, however, must be carefully selected, and usually should be those with severe sciatic scoliosis and marked muscle spasm which it is desirable to relieve by anesthesia. Finally, there is a small group of cases, to be selected with the utmost care, in which treatment should be surgical, with the object of causing fusion of the lumbosacral or sacro-iliac joint, or both.

SUMMARY AND CONCLUSIONS

Sciatica or sciatic pain may be a symptom of constitutional or systemic disease, of tumor or inflammation of the spinal cord or nerve, of derangement or inflammatory reaction about the lumbar vertebrae, intervertebral foramina, or sacro-iliac joint, or the result of postural strain.

In the treatment of so painful a lesion, the contributory etiologic factors must be considered and eliminated if possible.

There is a large group of cases in which the sciatic pain is of uncertain pathogenesis, and efforts have been made to distinguish between sciatic neuritis and sciatic neuralgia. This may be possible clinically, but we were unable to find specific treatment separately applicable to the two conditions.

For the purpose of expediency, we divided the methods of treatment of sciatica into ambulatory and institutional. Many patients are unable, for economic and other reasons, to go to a hospital, and although the institutional form of treatment is the more efficacious, a certain proportion of the patients can be treated successfully by ambulant methods. Institutional treatment can be used alone or for the purpose of supplementing ambulant treatment.

Results of the ambulant forms of treatment are as follows: Epidural injection was done in eighty cases; in 52 per cent relief was complete; in 24 per cent it was moderate, and in 22 per cent there was no relief. Diathermy was instituted in thirty-six cases; 33 per cent of the patients were completely relieved; 12 per cent were moderately relieved, and in 55 per cent there was no relief. Epidural injection and diathermy were applied in twenty-one cases; in 42 per cent of cases there was complete relief; there was moderate relief in 10 per cent and no relief in 48 per cent. A sacro-iliac belt and diathermy were employed in fifty-two cases; relief was complete in 32.6 per cent, moderate in 13 per cent, and in 54.4 per cent there was no relief.

Epidural injection, a belt and diathermy were employed in eight cases; 85 per cent of the patients were completely relieved; 2 per cent were moderately relieved, and 13 per cent were not relieved.

Results of treatment of patients confined to bed were as follows: In twenty-eight cases the following measures were employed: double Buck's extension, diathermy, epidural injections, intravenous injections of foreign protein, and elimination of foci of infection. Of the patients, 85.7 per cent were completely relieved and 14.3 per cent moderately relieved. In fourteen cases, the same measures were employed except that epidural injection was omitted. Complete relief resulted in 63 per cent, moderate relief in 23 per cent and no relief in 14 per cent.

GONOCOCCEMIA WITH RECOVERY

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A case of gonorrheal sepsis with recovery is apparently so rare as to be worthy of reporting. A careful study of the literature reveals not many more than a dozen proved cases on record in which recovery has taken place. Reports of such cases have been made by Thayer,¹ Silvestrini, Dieulafoy, Marfan and Debré, Tapie and Riser, O'Brien and Bancker,² Jenkins,³ Cabot,⁴ Garlock,⁵ Wheeler and Cornell,⁶ and Rubenstone and Israel.⁷ The case I am about to report is the seventh case on record in which recovery has taken place without a resultant cardiac lesion. I feel, however, that the small number of cases of recovery from gonorrheal sepsis on record is a false index to the actual number of recoveries from gonococcemia that occur. The difficulty in obtaining cultures of the gonococci and the failure to suspect the possibility of gonorrheal sepsis in cases of gonorrheal arthritis not serious enough to warrant a blood culture probably account for the infrequent detection of recoveries in gonococcemia. With so few cases on record, any statistical statement as to the prognosis in gonorrheal sepsis is almost impossible. The nearest approach to the truth was probably reached by Thomas⁸ in his statement that patients with mild gonorrheal sepsis may get well, that severer cases rarely end in recovery, and that if the gonococci are mixed with staphylococci a fatal outcome is almost certain.

REPORT OF CASE

L. W., a woman, aged 31, divorced, a manicurist, who entered the hospital, June 20, 1932, was taken ill with generalized muscular pains, abdominal cramps, chills and severe headache three days previous to her admission. The next day there was intense soreness of both feet, the left wrist, and the

right elbow. Her menstrual history was uneventful. She had had two children with normal labors and puerperiums. Her health generally had been good with the exception of an attack of pneumonia in 1918. There was a profuse leukorrheal discharge of one day's duration, immediately previous to her admission to the hospital.

The patient was acutely ill but well nourished. She had a maculopapular eruption, diffusely scattered over the body, thighs and arms, which was diagnosed at this time as being a bromide rash, because she had taken large doses of bromoquinine. Moderate injection of the conjunctivae seemed to substantiate this view. Her left elbow and wrist were painful, tender and swollen. Gynecologic examination done in the medical service was negative, except for slight adnexal tenderness and a retroverted uterus. The cervix was covered with a thick discharge, which was positive for gonococci. June 26, fluid appeared in the left elbow joint, and 15 cc. of cloudy sticky yellow fluid was removed. A culture of the fluid was reported positive for gonococci. July 5, a small amount of fluid was detected in the left knee joint. A pustular eruption appeared at this time on both lower extremities and behind the left ear. A dermatologic consultation suggested the diagnosis of pyoderma following a blood stream infection. Blood culture taken at this time on plain beef broth with 1 per cent dextrose was negative. July 8, a heart examination revealed a snapping apical first sound with a soft systolic murmur not transmitted; the pulmonic second sound was not accentuated. There was no enlargement on the right side. The lungs showed dulness and persistent râles at the left base. There were no changes in the vocal or breath sounds. July 14, a blood culture taken by the first medical division on vitamin ascitic broth was reported positive. A blood culture on the same medium, July 20, was reported positive. July 21, a complement fixation test for gonococci was reported negative. Gynecologic consultation on July 25 revealed moderate tenderness and slight induration in both adnexal regions, but the gynecologic pathologic condition was thought to be chronic and to have no relation to the present condition. The spleen appeared enlarged to percussion but was not palpable. The right wrist and right interphalangeal joints became swollen and tender. Cardiac examinations from July 24 to July 28 were reported negative. July 28, examination again showed no pelvic pathologic changes to account for the temperature. August 1, an examination of the heart revealed a soft systolic murmur at the apex and pulmonic areas. The spleen was still percussed large but not palpable. Lesions on the tongue and hard palate visible at this time were suggestive of petechiae. A blood culture, August 13, on vitamin ascitic broth was reported negative.

The patient was now transferred from the medical to the gynecologic ward for the treatment of gonorrheal cervicitis and arthritis. Smears from the cervix and urethra taken in our wards were repeatedly positive for gonococci. Daily Elliott treatments were begun, August 18, and continued up to September 25, when the temperature became normal and consecutive cervical smears were negative.

The Elliott treatment is a method of introducing heat through the vagina by means of a bag containing water at a temperature of from 115 to 120 F., the heat being increased 0.75 degree per minute until a temperature of 130 is reached. This temperature is maintained for the remainder of the hour and constitutes one treatment. Three small transfusions were given, August 18, 22 and 30. Unfortunately, the patient developed a secondary infection in the transfusion wound which somewhat retarded her recovery.

She was left with a chronic arthritis of the right wrist joint, for which gonococcus vaccine was suggested but not given. She was referred to the physical therapy department for further treatment of the arthritis.

From September 16 to September 28, she was given intramuscular injections of increasing doses of milk on alternate days. All other treatment was symptomatic and consisted chiefly of sedatives and large doses of salicylates.

The temperature curve during the month of June ranged from 98 to 102.8; in July, from 98 to 104; in August, from 98 to 103; in September, from 98 to 101.5, and in October her temperature was normal. Repeated urinalyses were essentially

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1. Thayer, W. S.: On Cardiac Complication of Gonorrhea, *Bull. Johns Hopkins Hosp.* 33: 361 (Oct.) 1922.

2. O'Brien, T. J., and Bancker, E. A., Jr.: *Gonococcus Septicemia: Recovery Without a Cardiac Complication*, *New England J. Med.* 198: 184 (March 15) 1928.

3. Jenkins, J. A.: *Gonococcal Septicaemia*, *Brit. M. J.* 1: 641 (April 29) 1922.

4. Cabot, H. C.: *Bacteremia, Urethritis and Arthritis?* *Boston M. & S. J.* 197: 1140 (Dec. 15) 1927.

5. Garlock, J. C.: *Gonococcal Bacteremia in a Woman with Cure by Surgical Intervention*, *J. A. M. A.* 97: 999 (Oct. 3) 1931.

6. Wheeler, G. W., and Cornell, N. W.: *Gonococcal Bacteremia in a Woman with Apparent Cure by Surgical Intervention*, *J. A. M. A.* 94: 1568 (May 17) 1930.

7. Rubenstone, A. I., and Israel, Leon: *Gonococcemia with Recovery*, *J. A. M. A.* 99: 1684 (Nov. 12) 1932.

8. Thomas, J. D.: *Gonorrheal Septicemia with Marked Cardiac Involvement*, *M. Rec.* 74: 668 (Oct.) 1908.

negative except for the appearance of a moderate trace of albumin and an occasional granular cast. The Wassermann test was negative. The leukocyte count ranged from 9,800 to 13,000, with about 80 per cent polymorphonuclears. Her red blood count stayed around 4,200,000 and 70 per cent hemoglobin. Another complement fixation test of gonococci, October 4, was reported positive. She was discharged, October 5, with the following discharge note: "Right wrist still quite swollen. No other joints involved. Vaginal examination reveals mild bilateral adnexal thickening, but no masses. Smears from the cervix and urethra have been consecutively negative for gonococci." Further follow up was not possible because the patient was sent to Chicago by the social service.

COMMENT

The clinical history in my case was quite similar to the histories of the cases of recovery previously reported. Almost all the cases on record have occurred in women. The cardiac involvement in those cases in which recovery has taken place without a resultant cardiac lesion seems to have been confined to a transient soft systolic murmur at the apex, which O'Brien and Bancker suggested might be due to an edema of the valves, which occurs during the height of septecemia. Practically all of the cases presented an embolic rash, which varied in character, a few becoming pustular, cultures from which, however, were negative for gonococci. The pelvic pathologic changes in the cases that occurred in women was surprisingly slight, the gonococci seeming to have left their original site relatively unimpaired, only to wander off and do more damage elsewhere. Most of the patients suffered with multiple arthritis, although Cabot's patient had only an arthralgia. In the few cases in which complement fixation reactions were done, the complement fixation reaction was delayed and did not become positive until months after the onset of the disease. The case that came under my observation gave a positive complement fixation reaction without the use of auxiliary vaccine injections. The classification of two types of cases as described by Wheeler and Cornell and by Garlock—those giving persistently positive cultures in which the prognosis is grave and those giving intermitting positive and negative cultures in which the prognosis is more favorable—is a point well taken. Unfortunately, only four cultures were done in the case reported here, so any such classification was impossible.

In this case, specific or intravenous medication was not instituted at any time. Although I am in no position to comment on the rationale of using Pregl's solution of iodine intravenously, as employed by Rubenstone and Israel, or of using gonococcus vaccine injections, nevertheless the value of these therapeutic measures must be appraised with considerable caution in view of this patient's spontaneous recovery. Only with a good number of cases with sufficient controls can any scientific conclusions be drawn as to the value of specific therapy. I am wholly in accord with the principle of treating the focus of infection as expounded by Cornell and Wheeler and by Garlock, but I hesitate to subscribe to their method of surgical intervention. I am of the opinion that continued Elliott treatment, as described by Holden and Gurnee,⁹ are most efficacious in eradicating the gonococci from the genital organs. With this therapeutic measure available, I am therefore strongly opposed to the use of any major operative procedures in an effort to cure gonococcemia.

9. Holden, F. C., and Gurnee, W. S.: The Elliott Treatment—A New Method of Applying Heat, *Am. J. Obst. & Gynec.* 22: 87 (July) 1931.

CONCLUSIONS

1. Recoveries from gonococcemia are probably far more frequent than is indicated by the record because:

(a) Special mediums are essential in obtaining cultures of the gonococci. In the case reported here, vitamin ascitic broth, prepared by cooking the broth at a low temperature over a long period of time so as not to destroy the vitamins and by adding 10 cc. of ascitic fluid to 250 cc. of the broth, was used.

(b) The more frequent taking of blood cultures in cases of gonorrheal arthritis would probably reveal more cases of gonococcemia.

2. A proved case of gonococcemia resulted in recovery without a resultant cardiac lesion.

3. I have emphasized the treatment in this case in that

(a) There was no specific or intravenous medication employed.

(b) The Elliott treatments were most effective in eradicating the gonococci from all latent foci of infection.

(c) There was no surgical intervention.

LATE ETHER CONVULSIONS

REPORT OF TWO CASES

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BOSTON

The occurrence of generalized convulsions during deep ether anesthesia, some cases ending in death, has stimulated much active discussion in the British medical literature since 1925. A personal experience with two cases, one of which was fatal, would seem to justify this report, since a careful survey of the American literature during the past decade reveals no similar reports, and more particularly since Blomfield¹ of the Anesthetics Committee of the Medical Research Council and of the Royal Society of Medicine has recently asked for American reports.

THE CONVULSION

The phenomenon in question is quite distinct from the familiar ether tremor or clonus that develops early in anesthesia, and it must not be confused with the jactitations that may occur under ether when there is oxygen limitation. The attack generally begins when the patient is deeply under the anesthetic, with slight twitchings about the eyes or mouth. These are followed by spasmodic contractions of the limbs and most of the muscles of the body, resulting in convulsive epileptiform movements involving the whole body; the movements may become so violent that the continued performance of the operation becomes impossible. If the anesthetic is discontinued, the movements may diminish and recovery may follow. Unfortunately, this is not always so, and death on the operating table has resulted, as in my first case. Alternatively, according to Hadfield,² the convulsions may continue after the patient has returned to bed, and with a fatal result.

From the Surgical Services of the Beth Israel Hospital and the Massachusetts General Hospital and the Department of Surgery, Harvard Medical School.

1. Blomfield, Joseph: Convulsions During Anesthesia (communication to the editor), *Anesth. & Analg.* 11: 38 (May-June) 1932.

2. Hadfield, C. F.: Discussion on Late Ether Convulsions, *Proc. Roy. Soc. Med.* 21: 1699 (Aug.) 1928.

REPORT OF CASES

CASE 1.—History.—A Greek boy, aged 5 years, admitted, June 17, 1929, complained of steady pain in the right lower quadrant, of two days' duration; he vomited on the first day of his illness and then complained of nausea. His only past illness had been measles.

Physical Examination.—The tonsils were hypertrophied but not inflamed; there were pea-sized glands at the angle of either jaw; there was marked spasm and tenderness in the right lower quadrant, particularly over McBurney's point; the heart and lungs were not remarkable. White blood cells numbered 18,200; the temperature was 101.6 F., and the blood pressure 110 systolic and 65 diastolic.

Operation.—After an uneventful induction with nitrous oxide and oxygen, anesthesia was carried on with ether (closed cone method). A retrocecal, perforated, gangrenous appendix was found and removed with considerable difficulty. As the peritoneum was being closed, generalized clonic convulsions developed despite deep anesthesia; the ether cone was removed immediately. Five minutes later the anesthetist announced that the patient was pulseless. The patient's face was livid despite the presence of respirations. Seven minutes after the onset of the convulsions, respirations ceased. Epinephrine was injected into the heart, and external massage was attempted. The abdomen was reopened and the heart was massaged through the diaphragm. After thirty minutes of artificial respiration the child was pronounced dead. Six ounces (175 cc.) of ether had been used in sixty minutes. The respirations, pulse, color and relaxation had been good throughout. The respirations had varied between 32 and 48; the pulse between 160 and 180.

A roentgenogram of the chest was taken within fifteen minutes of the death of the child. Dr. George W. Holmes reported as follows: "Supracardiac dullness is increased but its shape is not that usually seen in enlargement of thymus. The fact that the lungs were deflated at the time the plate was taken may account for the appearance."

Autopsy.—There were a few palpable, firm, discrete, pea-sized, inguinal lymph nodes. The axillary and cervical lymph nodes were not enlarged. Throughout both the large and the small intestine there was marked lymphatic hyperplasia; this was more marked in the ileum, where the mucosa was studded with whitish nodules (from 1 to 3 mm.), which gave it a granular appearance. Peyer's patches were not remarkable. The mesenteric glands were greatly enlarged and firm; the involvement was diffuse. The retroperitoneal glands were moderately enlarged.

The lobes of both lungs were crepitant, but the lower lobe in each side showed some dependent congestion.

There was normal color and consistency in the thymus. It appeared slightly enlarged, measuring: length: right lobe, 6 cm., left lobe, 7.5 cm.; width, 5 cm.; thickness, from 1 to 2 cm.; weight, 25 Gm.

The bronchial glands were slightly enlarged and firm. The heart weighed 100 Gm.; the liver, 635 Gm., and the spleen, 70 Gm. The spleen was dark reddish blue and firm; the corpuscles were prominent, giving a mottled appearance.

The pathologist could find no cause for the convulsions or death. Impurities could not be found in the ether.

CASE 2.—History.—A Canadian girl, aged 17 years, admitted, Jan. 14, 1930, complained of lower midabdominal pain and vomiting of six hours' duration. She had had similar attacks one and five months previously. There were no genito-urinary symptoms and there was no previous history of convulsions or epilepsy.

Examination.—Physical examination showed enlarged tonsils and slight tenderness in both lower quadrants with slight spasm on the right; rectal examination showed tenderness in both culdesacs.

The temperature was 100.4 F.; the pulse, 104, and the respiration rate was 25. The white blood cells numbered 18,000. Examination of the urine did not yield any noteworthy observations.

Operation.—A retrocecal appendix, acutely inflamed, with a well walled-off abscess cavity was found, and the appendix

was removed. As the peritoneum was being sutured, the patient developed generalized convulsions and cyanosis, despite deep ether anesthesia. When the ether cone was removed, the color soon became normal but the convulsions continued. Twenty cubic centimeters of 50 per cent dextrose was injected intravenously and ten minutes later the convulsions gradually ceased. The abdomen was then closed with drainage.

Anesthesia had consisted of nitrous oxide and oxygen induction followed by ether (closed cone method). Twelve ounces (350 cc.) of ether had been used; the pulse rate varied between 120 and 130, the respirations between 20 and 30.

The patient was discharged, January 24. Her convalescence had been uneventful. The pathologist reported "acute suppurative appendicitis with perforation." The state chemist could find no impurities or toxic agents in the specimen of ether used.

THEORIES

Convulsions during deep ether anesthesia seem never to have occurred until recent times. From the reports in the literature it would seem that, prior to 1925, only Thomas³ witnessed this phenomenon. Despite numerous reports in the British literature, no satisfactory explanation has been forthcoming. Many of the patients have been suffering from some acute infection, but others have been in perfect health. In this paper I do not propose to detail or criticize the numerous theories advocated in the British literature. For a detailed exposition, the papers of Hadfield,² Walton,⁴ MacKenzie,⁵ Sykes⁶ and Wilson⁷ should suffice. I shall make brief mention, however, of the more important theories.

1. *Impurities in the Ether.*—The strongest advocates of this theory are Walton⁴ and Wilson.⁷ The common impurities in ether are acetaldehyde, peroxides, ethyl sulphide, ketones and alcohol. The first three are toxic if present to the extent of 0.5 per cent or more. Wilson believed that death was due to a poison acting on the central nervous system, such poison rendering the nerve cells incapable of utilizing oxygen. He reported four fatal and five nonfatal cases in one year; all were cases of appendical abscess.

2. *Overetherization with Overoxygenation.*—This theory is advocated by Mennell,⁸ who reports eight cases.

3. *Excess of Carbon Dioxide in the System.*—Pinson⁹ says this causes dyspnea, with exaggerated muscular activity overflowing from the respiratory group to the rest of the body. He records fifteen cases, of which five were fatal; all were in children or young adults with acute infections.

4. *Anoxemia of Brain, Due to Edema and Collapse of Lung Bases.*—This may result in a patient from failure to receive proper preanesthetic medication.¹⁰

5. *Atropine Overdosage.*—This is mentioned by Hornabrook.¹¹

6. *Increased Cerebral Vascularity.*—This is mentioned by Daly.¹²

3. Thomas, L. K.: Discussion on Late Ether Convulsions, *Proc. Roy. Soc. Med.* 21: 1705 (Aug.) 1928.

4. Walton, A. C. R.: A Note on Ether Convulsions, *Brit. M. J.* 2: 8 (July 7) 1928.

5. MacKenzie, J. R.: Convulsions During Surgical Anesthesia, *Brit. M. J.* 1: 440 (March 14) 1931.

6. Sykes, W. S.: Ether Convulsions, *Brit. M. J.* 1: 1128 (June 21) 1930.

7. Wilson, S. R.: "Ether" Convulsions, *Lancet* 1: 1117 (May 28) 1927.

8. Mennell, Z.: Discussion on Late Ether Convulsions, *Proc. Roy. Soc. Med.* 21: 1705 (Aug.) 1928.

9. Pinson, K. B.: Convulsions Occurring During Surgical Anesthesia, *Brit. M. J.* 1: 957 (May 28) 1927.

10. Gwathmey, J. T.: Ether Convulsions: Letter to the Editor, *Lancet* 1: 1369 (June 25) 1927.

11. Hornabrook, R. W.: Convulsions Occurring During Surgical Anesthesia, *Brit. M. J.* 2: 471 (Sept. 10) 1927.

12. Daly, Ashley: Ether Convulsions: A Note as to Treatment, *Brit. J. Anaesth.* 9: 67 (Jan.) 1932.

7. *Acute Toxemia*.—MacKenzie⁵ feels that this is the essential and predisposing condition and that ether is the exciting agent.

8. *Histamine Bodies Liberated by the Trauma of Operation*.—Clarke¹³ states that this increases the vascularity of the cerebral cortex, particularly of the Rolandic area, an effect that is increased by ether. This causes convulsions.

9. *Hadfield's² Conclusions*.—(a) Some persons possess an unexplained tendency to develop convulsions under ether anesthesia. (b) One or more accessory factors may be necessary. (c) Among such factors may be heat, sepsis or other toxemia, impurities in the ether, and youth.

10. *Overetherization*.—Thomas³ observed five cases prior to 1925.

COMMENT

The therapeutic use of dextrose in our second case was due to a suggestion by Dr. E. P. Richardson, former chief of the West Surgical Service of the Massachusetts General Hospital, who expressed the opinion that convulsions, such as occurred in case 1, might have resulted from a hypoglycemia due to a depleted glycogen reserve. This concept was suggested by the work of MacLean and Sullivan,¹⁴ who, when studying so-called status lymphaticus from the blood sugar angle, observed low blood sugar levels within a half an hour of death in three patients in convulsions; the diagnosis of status lymphaticus was made at autopsy. Shortly after my first experience, Griffith¹⁵ reported a series of cases of convulsions associated with hypoglycemia, occurring in children.

It is not my purpose in this paper to propose that late ether convulsions are due to hypoglycemia; I have no evidence for such an hypothesis. This is merely a clinical report intended to stimulate discussion and perhaps elicit further case reports from American writers.

SUMMARY

Of two cases of convulsions occurring during late ether anesthesia, one was fatal and the other ceased, coincident with the intravenous injection of 50 per cent dextrose.

319 Longwood Avenue.

13. Clarke, L. T.: Convulsions During Ether Anesthesia, Brit. M. J. 2: 358 (Aug. 22) 1931.

14. MacLean, A. B., and Sullivan, Ruth C.: Blood Sugar in Status Thymolymphaticus: New Theory as to Cause of Sudden Death, Proc. Soc. Exper. Biol. & Med. 23: 425 (March) 1926.

15. Griffith, J. P. C.: Hypoglycemia and Convulsions of Early Life, J. A. M. A. 93: 1526 (Nov. 16) 1929.

Imperturbability.—In the physician or surgeon no quality takes rank with imperturbability, and I propose for a few minutes to direct your attention to this essential bodily virtue. Perhaps I may be able to give those of you in whom it has not developed during the critical scenes of the past month a hint or two of its importance, possibly a suggestion for its attainment. Imperturbability means coolness and presence of mind under all circumstances, calmness amid storm, clearness of judgment in moments of grave peril, immobility, impassiveness, or, to use an old and expressive word, phlegm. It is the quality which is most appreciated by the laity though often misunderstood by them; and the physician who has the misfortune to be without it, who betrays indecision and worry, and who shows that he is flustered and flurried in ordinary emergencies, loses rapidly the confidence of his patients. In full development, as we see it in some of our older colleagues, it has the nature of a divine gift, a blessing to the possessor, a comfort to all who come in contact with him.—Osler, William: Aequanimitas, Philadelphia, P. Blakiston's Son & Co., 1904, p. 3.

CONGENITAL READING DISABILITY— STRÉPHOSYMBOLIA

REPORT OF FIVE CASES OF PARTIAL WORD BLINDNESS

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If any excuse is needed for presenting this report, the fact that these little patients are often brought to the ophthalmologist for advice is sufficient. However, it is my further purpose to summarize present knowledge of the condition in order that it shall not escape recognition.

In 1877, Kussmaul¹ pointed out that blindness for words is encountered clinically as an isolated condition. Word blindness was the term selected by him for this acquired pathologic disorder of a special faculty. By word blindness is meant a condition in which with normal vision, and therefore seeing the letters and words distinctly, an individual is no longer able to interpret written or printed language. Subsequent investigations and reports on this acquired word blindness have been numerous and have established the lesion in the angular gyrus of the left side of the brain in right-handed individuals.

The second contribution of importance in this study was made by two English ophthalmologists. In 1896, Morgan² reported the first case of congenital word blindness to be found in medical literature. A boy, aged 14 years, showed no inferiority to others of his own age except for his inability to learn to read. In the report Dr. Morgan said: "His great difficulty has been—and is now—his inability to learn to read. This inability is so remarkable, and so pronounced, that I have no doubt it is due to some congenital defect. His visual memory for words is defective or absent; which is equivalent to saying that he has what Kussmaul has termed 'word blindness' (caecitas syllabaris et verbalis). He does mathematics rapidly and correctly." Morgan's attention was called to this type of condition by a paper published in 1895 by another English ophthalmologist, Dr. James Hinshelwood,³ whose two volumes, one on letter, word and mind blindness,⁴ the other on congenital word blindness,⁵ are classics and have been a liberal source for this review. The type of cases described by the two aforementioned authors together with others showed an almost entire lack of knowledge of printed and written letters. Hinshelwood recognized that such patients could be taught and would develop this faculty if patience and persistence were methodically instituted. Thomas⁶ called attention to the fact that such a condition might follow an hereditary bent. Barlow⁷ seems to have clearly demonstrated, in a case of aphasia, that the function of a center on one side of the brain may be taken up by the corresponding center or region on the opposite side. The work of

1. Kussmaul: Word Blindness, in Ziemssen's Cyclopaedia of the Practice of Medicine, New York, William Wood & Company 14: 770, 1881.

2. Morgan, W. P.: A Case of Congenital Word Blindness, Brit. M. J. 2: 1378, 1896.

3. Hinshelwood, James: Word Blindness and Visual Memory, Lancet 2: 1564, 1895.

4. Hinshelwood, James: Letter, Word, and Mind-Blindness, London, H. K. Lewis & Co., Ltd., 1900.

5. Hinshelwood, James: Congenital Word-Blindness, London, H. K. Lewis & Co., Ltd., 1917.

6. Thomas, C. J.: Some Forms of Congenital Aphasia in Their Educational Aspects, Arch. f. Schulhyg., 1905, p. 171.

7. Barlow, T.: On a Case of Double Hemiplegia with Cerebral Symmetrical Lesions, Brit. M. J. 2: 103, 1877.

Broca⁸ and the associations which his name suggests are widely known. As far back as 1836, Marc Dax⁹ suggested that in the left cerebral hemisphere there exists a center for the accumulation of speech memories of right-handed individuals.

Just what causes the location of the speech center for right-handed persons in the left cerebrum has not been entirely decided. In 1905, Gould¹⁰ listed nine theories:

1. A natural provision (Sir Charles Bell and others).
2. The left-sided location of the heart (referred to by Wilson).
3. A greater supply of nerve force to the muscles because of an earlier and greater development of the brain upon one side (Professor Gratiolet).
4. Obstruction to the flow of blood in the vena cava by the pulsation of the aorta (Dr. Barclay).
5. Inspiration produces mechanically a superior efficacy of the muscles of the right side (Professor Buchanan).
6. The center of gravity theory. The influence of the weight of the viscera of the two sides of the body upon the position of the center of gravity (Dr. Struthers).
7. The origin of the subclavian arteries, the left before the right in the left-handed, with superiority of blood supply to certain structures (Professor Hyrtl).
8. The development of one cerebral hemisphere more than the other (Wilson).
9. The Topsy theory—"just growed."

Gould's own conclusions are of interest in spite of the fact that no one has attempted to substantiate them:

1. Coordination of sensation, perception, judgment and act are rendered more accurate, expert and quick by this close contiguity and interrelationship than if made by commissural fibers from the other cerebral hemisphere.
2. The original location of the speech center in the dextral was caused by the almost universal employment of the right or spear-hand in sign language preferred to the left or shield-hand, because this was more restricted in movement by holding the shield over the heart.
3. The origin of left-handedness was in large measure due to the location or education of the speech center in the right brain because of the injury to the dextral organs, *but chiefly to disease or deficient vision of the right eye* (italics mine).

Of interest to interpolate at this point is the recent investigation by Dandy,¹¹ who concludes that:

1. It is possible to remove all of the right cerebral hemisphere above the basal ganglia with no appreciable disturbance of mentality.
2. By the excision of the left occipital lobe and of the lower third of the left temporal lobe we can be sure that none of these regions are responsible for intelligence. The intellect, therefore, is concerned with the remaining portion of the left cerebral hemisphere and is doubtless closely related to the speech mechanism.
3. Ligation of the anterior cerebral artery on the left side causes complete and everlasting loss of consciousness. This, of course, in a right-handed individual. Thus it is suggested that the anatomy of the vascular supply may be the dominating cause.

But what part does the eye have in all this controversy? The first mention of ocular dominance found in the literature was made by Porta¹² in 1593. It was noted that right-handed individuals preferred to use the right eye to the exclusion of the left eye when aiming.

In 1903, two articles appeared independently, drawing attention to ocular dominance. Rosenbach¹³ demonstrated that right-handed individuals preferred the right eye, while left-handed ones were more prone to use the left eye. Majewski¹⁴ showed that Hering's conception of a single cyclopic eye with the theory of identical visual directions was contrary to a phenomenon observed by Javal. In his series of cases, Majewski found that 55 per cent were right-eyed, 19 per cent were left-eyed, and in 21 per cent visual direction was between the two eyes but not always exactly half-way. Gould¹⁵ even went so far as to say that "The indicator of all action, the very creator of intellect, is vision. Hence all right-handed people are also right-eyed."

Enslin¹⁶ attempted to substantiate Rosenbach's work by showing not only that do the right-handers prefer the right eye but that the majority of left-handers prefer the left eye.

About this time attention was directed to methods of determining ocular dominance. Durand and Gould¹⁷ brought forth a simple piece of cardboard with a short tube attached in front of the small hole in one side, through which objects viewed at a distance could be seen only with one eye, although the patient was focusing with both eyes. They also stressed the point that improper refraction may cause loss of the naturally dominating eye with serious consequences. Dolman¹⁸ describes a simple piece of paper or cardboard, 13 by 20 cm., with a hole 3 cm. in diameter in its center, which the patient holds at arm's length and sights through. In a conclusion in regard to some psychologic studies, Miles¹⁹ declares: "Ocular dominance is assuming a place of increasing importance in ophthalmology and physiological optics. It is a phenomenon which may be objectively measured and used in studying the general problem of dominance by the right or left cortical hemispheres."

Wray²⁰ described two tests for ocular dominance. The first method was by means of a ring through which the person examined looked at a distance object. The second method interests the ophthalmologist: While looking at the middle letter of the 6/24 line of the Snellen test type, the patient's index finger of the right hand is pointed at it, then the left eye is closed. If the person is right-handed, the pointing is accurate. Thus Wray interpreted handedness by ocular dominance. Griesbach²¹ substantiated Wray's observations as far as left-handed individuals are concerned. Quinan²² estimated that 4 per cent of our population is left-handed, and that stammering occurs in sinistrals with a frequency from three to seven times greater than in dextrals.

Lloyd Mills²³ is perhaps the ophthalmologist of the United States who has studied eyedness and handedness

8. Broca, P.: Remarques sur le siege de la faculté du langage articulé, suivies d'une observation d'aphémie, *Bull. Soc. anat. de Paris* 6: 330, 1861.

9. Cited by Travis, L. E.: *Speech Pathology*, New York, D. Appleton & Co., 1931, p. 28.

10. Gould, G. M.: *Biographic Clinics, Dextrality and Sinistrality*, London, Reiman, Ltd., 3: 341, 1905.

11. Dandy, W. E.: Changes in Our Conception of Localization of Certain Functions of the Brain, *Am. J. Physiol.* 93: 643 (June) 1930.

12. Porta, Ioan Baptista: *De Refractione optica parte*, Neapoli, apud Io. Iacobum Carlinum et Antonium Pacem, 1593.

13. Rosenbach, O.: Ueber Monokulare Vorherrschaft beim binocularen Sehen, *München. med. Wchnschr.* 2: 1290, 1903.

14. Majewski, K. W.: Postępek Okulestyczny, No. 9, 1903; abstr. *Zimmerman, C.: Ophthalmology* 1: 337, 1905.

15. Gould, G. M.: *Biographic Clinics, Dextrality and Sinistrality*, p. 351.

16. Enslin, K.: Kurze Mitteilung über ein Augensymptom der Linkshandigkeit, *München. med. Wchnschr.* 57: 2242, 1910.

17. Durand, A. C., and Gould, G. M.: A Method of Determining Ocular Dominance, *J. A. M. A.* 55: 369 (July 30) 1910.

18. Dolman, Percival: Tests for Determining Sighting Eye, *Am. J. Ophth.* 2: 867 (Dec.) 1919.

19. Miles, W. R.: Ocular Dominance Demonstrated by Unconscious Sighting, *J. Exper. Psychol.* 12: 113 (April) 1929.

20. Wray, C.: Right-Handedness and Left-Brainedness, *Lancet* 1: 683, 1903.

21. Griesbach, H.: Ueber Linkshandigkeit, *Deutsche med. Wchnschr.* 45: 1408, 1919.

22. Quinan, Clarence: Sinistrality in Relation to High Blood Pressure and Defects of Speech, *Arch. Int. Med.* 27: 255 (Feb.) 1921, quoted in *Is Left-handedness a Sign of Inferiority?* editorial, *J. A. M. A.* 76: 1010 (April 9) 1921.

23. Mills, Lloyd: Eyedness and Handedness, *Am. J. Ophth.* 8: 933 (Dec.) 1925.

to the greatest extent. He emphasizes the idea that bilateral asymmetry of function is limited by no means to the eyes. A conclusion he draws²⁴ is that "nervous and mental instability apparently is more common among the crossed dextrals and sinistrals than among the pure dextrals and sinistrals. The suggestion is made that the deliberate reeducation of these classes to their natural full left-sided dominance may be an important factor in reestablishing nervous balance."

As early as 1911, Whipple²⁵ reported a case of left-handedness in a child, which condition, when the use of the right hand was stimulated, caused stammering. He also cited a case described by E. B. McCready in which a little girl ceased to talk when left-handedness was corrected. Thus another factor enters the picture. Beeley's²⁶ experiments showed conclusively that mirror writing is not correlated with mental deficiency, as held by Judd,²⁷ Barr²⁸ and Sherlock,²⁹ but is a characteristic of extreme left-handedness. This was substantiated in his³⁰ further work. Lately Smith³¹ has reviewed the theories as to the cause of right-handedness and left-handedness. Ballard³² has given an insight into variations in speech of left-handed individuals. Nice³³ was of the opinion that speech depends on the development of handedness. A review of this type would not be complete without mention of Parson's³⁴ book on left-handedness. In studying a large group of school children, he reported the following figures: Out of 877, 29.3 per cent were left-eyed; of 608 who were right-eyed, 99.5 per cent were right-handed; of 257 who were left-eyed, only 12.4 per cent were left-handed.

The third and final important contribution to this subject was made by Dr. S. T. Orton. In his preliminary report Orton³⁵ gave the results of studying a group of children with reading difficulties. In his first series he found two cases that fitted Hinshelwood's criteria of true congenital word blindness, but one exhibited bizarre written productions. He reported fourteen other cases in this series. The majority of the children had a tendency to read from right to left and also had what is known as reversals. The reversals consisted of inability of distinguishing lower case p from g or q, and b from d. Orton emphasizes the importance of the left-handedness and mirror writers by citing previous reports. Gordon³⁶ found about 20 per cent of the children in a school for defectives left-handed; 8 per cent of the total number, 1,350, were mirror writers. Lucy³⁷ found many mirror writers even among right-handed individuals in an extensive study. No relation was revealed as to ocular dominance. In his second contribution, Orton³⁸ brings out

the fact that Berkhan³⁹ decided in 1885 that children with reading defects were mental defectives. He gives credit to Kerr⁴⁰ for reporting with Morgan independently but, at the same time, the first case of congenital word blindness. The outstanding features of strephosymbolia according to Orton are (1) difficulty in differentiating p and q, and b and d; (2) a striking tendency to confuse palindromic words such as was and saw, not and ton, and to reverse paired letters or even whole syllables or words in reading, so that they are read from right to left instead of from left to right; (3) a considerable degree of capacity to read from a mirror, and (4) a greater facility in producing mirror writing. He believes that it is easy to refute the assumption that reading disability is due to certain degrees of intellectual defect but that it is difficult to eradicate the condition. However, with patience and perseverance, much may be accomplished. No visual defects of any consequence were found in these patients.

REPORT OF CASES

The following five cases were sent to me for examination because it was thought that the inability of the child to make normal progress in school was due to visual defects. A consideration of the psychiatric phase will not be attempted, but certain behavior phenomena will be cited in order that this aspect of each individual case should be recognized.

CASE 1.—G. G., a Negro boy, aged 8 years, was seen in the neurologic clinic of the Northwestern University Medical School and was directed to my attention through Dr. Harry Paskind. The patient was referred by the school physician for a thorough examination because he was peculiar. He was large for his age, with an oversized head, and he wore thick myopic lenses. Subsequent examination of the eyes revealed myopic fundi with visual acuity of 20/15 for each eye with a correction of -5.0 D. S. = -1.0 × 90. He had been wearing this correction for one year. In reading the Snellen chart, it was noted that there was some hesitation even on the large P, B, D and L. In reading the small type there was great difficulty in recognizing the words was, not and dog. The single lower case letters b, d, g, p, q and y were often misquoted. The boy was left-handed and left-eyed. He was an exceptional artist for his age and excellent in mathematics. When asked to write with his right hand, he showed typical mirror penmanship. A sentence constructed mirror fashion was read quickly. He was returned to the school physician with an explanation of his partial word blindness and has made rapid progress after special attention to his defects. His father likewise was left-handed.

CASE 2.—H. H., a boy, aged 7 years, was seen in private practice, sent because his parents noticed that in reading he held his book very close and more especially on the left side. Neither parents nor either of his four grandparents was left-handed, and two younger brothers were right-handed. The patient used his right hand entirely in writing, eating, playing and every ordinary manipulation in which a hand was necessary, but he was decidedly left-eyed. This was repeatedly demonstrated by various tests. He even sighted a gun with his left eye, although the stock was held against his right shoulder. Visual acuity under a cycloplegic was as follows: O. D. = 20/15 + 0.5 D. S. = 20/15, O. S. + 0.25 D. S. = + 0.25 × 90 = 20/15. Skiascopy showed + 1.0 D. S. over this, and no glasses were recommended. A slight hesitation was noted in the reading of the Snellen test letters B, D and P. Reversals were frequent in reading, and the lower case letters b, d, p, and q were often entirely missed or slurred over. Attempts to write with the left hand were fraught with the usual clumsiness. However, he was able to mirror write readily with the right hand. His reading of mirror writing was not easy. Further questioning

24. Mills, Lloyd: Unilateral Sighting, California & West. Med. 28: 189 (Feb.) 1928.

25. Whipple, G. M.: The Left-Handed Child, J. Ed. Psychol. 2: 574, 1911.

26. Beeley, A. L.: An Experimental Study in Left-Handedness, Supp. Educational Monographs 2, No. 2, University of Chicago Press, 1918.

27. Judd, C. H.: "Mirror Writing," in Monroe's Cyclopaedia of Education, New York, Macmillan Company, 1911.

28. Barr, M. W.: Mental Defectives, Philadelphia, P. Blakiston's Son & Co., 1910.

29. Sherlock, E. B.: The Feeble-minded, New York, Macmillan Company, 1911.

30. Beeley, A. L.: Left-Handedness, Am. J. Phys. Anthropol. 2: 389, 1919.

31. Smith, L. G.: A Brief Survey of Right- and Left-Handedness, Pedagogical Sem. 24: 19, 1917.

32. Ballard, P. B.: Sinistrality and Speech, J. Exper. Pedagogy 1: 298, 1911.

33. Nice, M.: Ambidexterity and Delayed Speech Development, Pedagogical Sem. 25: 141, 1918.

34. Parson, B. S.: Left-handedness, New York, Macmillan Company, 1924.

35. Orton, S. T.: Word Blindness in School Children, Arch. Neurol. & Psychiat. 14: 581 (Nov.) 1925.

36. Gordon, Hugh: Brain 43: 4, 1920.

37. Lucy, G.: Brit. J. Psychiat. 14: 24, 1923.

38. Orton, S. T.: Specific Reading Disability—Strephosymbolia, J. A. M. A. 90: 1095 (April 7) 1928.

39. Berkhan, Oswald: Ueber die Störungen der Schriftsprache, Arch. f. Psychiat. 16: 3, 1885.

40. Cited by Travis.⁴¹

revealed that although he was large for his age he preferred the company of his younger brothers and their companions. His parents had never been able to train him in proper nightly habits. Mathematics was his best study. His father stated that he had entirely exhausted his ingenuity in attempts to teach him to read. In one month's time, under special tutoring by a student of child behavior problems who understood his difficulties, a marked improvement was shown. His inferiority complex was entirely lost. There was no more bed wetting. He became a leader among the boys of his age, most of whom were smaller than he.

CASE 3.—G. P., a boy, aged 9 years, was seen in private practice. After he had been in school for from six to nine months, his father, a physician, noted the boy's difficulty in the mastery of reading. Also, the teacher had written home a note asking that he be made to work harder on his studies. The parents realized that the boy was not lazy and that his only handicap was in reading. He was sent to an excellent child behaviorist, who recognized the condition. The ocular examination was a part of a routine examination two years after methods had been instituted to correct his defect. There was no left-handedness in either parent, four grandparents or an older brother. The only time the patient used his left hand in preference to the right was when at bat in baseball. He was definitely left-eyed. Visual acuity was 20/15 with either eye, and only a very minute degree of hyperopia was found. All letters were read with a fair amount of ease, but on particular search it was found that the lower case letters b, d, p and q caused slight difficulty. Mirror writing with the right hand was very facile. There was the usual difficulty in mirror writing with the left hand. This boy has evidently overcome most of his word blindness after excellent tutoring.

CASE 4.—R. C., a boy, aged 10 years, seen at the eye clinic of the Michael Reese Hospital, had been in the second grade for two years and had recently been returned to the first grade because of inability to keep up with the class. It was suggested that his difficulty might be due to impaired vision. The boy was large for his age and exceedingly timid. His visual acuity was 20/51 for either eye and at a postcycloplegic test would accept only +0.25 D. S., so glasses were not prescribed. The father was left-handed, as also was the boy. He was definitely left-eyed. His ability to read letters was so poor that numbers were used to test visual acuity. He read these rapidly and accurately. After much perseverance it was found that the letters which gave him especial difficulty were B, C, D, G, L, O, P and Q, both in upper and lower case, but more especially in the latter. He was not only good at mirror writing with the left hand but was an excellent mirror reader; in fact, he himself realized immediately that mirror reading was easy for him. He was referred to the clinic on mental hygiene, where, under the guidance of Dr. Erwin Eisler, he has made gradual progress.

CASE 5.—J. W., a girl, aged 6 years, seen in private practice, had been in school two months and was unable to learn the alphabet, although otherwise she was a seemingly bright child. She made grimaces when attempting close work and her parents thought there might be some visual defects. Neither parents nor paternal or maternal grandparents were left-handed. The child had always preferred the right hand. She was definitely left-eyed. Visual acuity with either eye was 20/15. A mild degree of hyperopia was found on refraction under a cycloplegic but not enough to warrant the prescribing of glasses. The child was greatly confused in reading lower case letters, especially b, d, p and q. She could recite the alphabet perfectly from memory. Because of her age, the test for mirror writing was not considered satisfactory. With private tutoring in six months' time this child is graded highest in her class in all subjects.

COMMENT

In all the cases cited it was demonstrated that the center for auditory memory was entirely normal. This factor was used as an adjunct in teaching these little tots. Travis's⁴¹ statement that handedness is the sine

qua non of laterality would not seem to be borne out by these cases; neither is it evident that Gould's⁴² explanation, that eyedness is determined by defects in one eye which cause the other one to become dominant, would fit in with such a group. From a perusal of this small group of cases, weight is added to Orton's⁴³ statement: "The master eye has been held by some to be a safer guide to native dominance than the master hand." The fact that early training may reverse the master hand while no amount of training has been able to change the master eye would seem to enhance the importance of determining eyedness. Histopathologic changes in the center for speech has not been studied in this type of case as yet but may in the future reveal an anatomic foundation of the difficulty.

SUMMARY

1. In five cases of acquired, congenital and partial (strephosymbolia) word blindness, ocular dominance has been the outstanding feature.
2. It is important to determine the dominant eye; it is of value to the ophthalmologist and to the patient's future.
3. It is hoped that, by bringing such a condition to the attention of the ophthalmologist, a saner regard will be stimulated for these little ones with partial word blindness, and thus the stigmas of "mental defectives" will be lifted from them.

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PANCREATIC NECROSIS

REPORT OF CASE WITH SEQUESTRATION OF THE PANCREAS AND RECOVERY

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The following case of pancreatic necrosis is reported because of the particularly interesting observations and the series of events that occurred during the course of the illness:

REPORT OF CASE

History.—I. C., a white man, aged 36, a dentist, was admitted to the Jewish Hospital of Brooklyn in the private surgical service of Dr. William Linder, April 13, 1932. About twelve hours before admission, the patient began to complain of nausea and retching, with excruciating epigastric pain which radiated first to the front of the chest and then to the right scapular region. The pain became so severe that the patient screamed in agony.

The past history revealed that he had had three mild attacks of general pain in the upper part of the abdomen and vomiting two years previously, but no definite diagnosis had been made at that time.

The family history was irrelevant.

Examination.—The patient was seen by Dr. Linder for the first time at 10:30 p. m. the night before his admission. At this time he appeared fairly well nourished and desperately ill, apparently in severe shock. His respiratory rate was 50 and his pulse 140 per minute. The temperature was 100.8 F., and the blood pressure 100 systolic, 80 diastolic. There was

42. Gould, G. M.: Righthandedness and Lefthandedness, Philadelphia, J. B. Lippincott Company, 1908.

43. Orton, S. T.: Special Disability in Spelling, Bull. Neurol. Inst. New York 1: 159 (June) 1931.

From the surgical service of Dr. William Linder and from the Department of Pathology, Dr. Max Lederer, director, Jewish Hospital of Brooklyn.

41. Travis, L. E.: Speech Pathology, New York, D. Appleton & Co., 1931, p. 60.

cyanosis of the face and extremities. The heart and lungs were normal. Abdominal examination revealed marked tenderness to palpation and rebound tenderness in the epigastric region, extending across the abdomen toward the left of the ensiform cartilage. There was no localized mass nor spasticity, but the abdomen presented a rather doughy feel to palpation. Because of extreme shock and the presence of pain in the chest, the differential diagnosis between coronary occlusion and acute pancreatitis had to be considered, but it was felt that the condition was due to the latter rather than to coronary occlusion. It was decided that the patient was too sick for any surgical intervention at the time but that, if he survived until morning, a laparotomy would be performed.

The urinalysis, including the Fehling test for sugar, was normal except for the presence of many hyaline casts.

The stool examination showed well formed, yellow feces with no undigested food particles.

A blood study showed: red blood cells, 4,510,000; white blood cells, 18,200 with neutrophilic polymorphonuclear leukocytes, 88 per cent; transitionals, 2 per cent; lymphocytes, 10 per cent, and hemoglobin (Dare), 85 per cent.

Operation and Result.—The patient was seen the following morning and the diagnosis of acute pancreatitis was still maintained. The condition of shock had by this time subsided to such a degree that a laparotomy was deemed safe and advisable. A right upper rectus incision was made and the peritoneal cavity opened. It was found to contain bloody fluid and some blood clots. The peritoneal surface was found to be the seat of a widely scattered fat necrosis and the mesocolon to be the seat of multiple subserous hemorrhages. The pancreas was swollen and of chocolate color.

The sanguineous fluid was immediately aspirated, and wide rubber drains were inserted into the pancreatic region at several points, down to Morrison's pouch, and to the duodenojejunal junction or omental bursa. The operation was performed under spinal anesthesia, the patient reacting satisfactorily.

Soon after the operation the patient received dextrose with sufficiently large doses of insulin to counteract the pancreatic deficiency that had set in. The diabetic state was apparently well controlled, so that the glycosuria diminished from 2 per cent on the second to normal quantities on the eighth postoperative day. There was also a synchronous decline in the blood sugar from 192 to 136 mg. per hundred cubic centimeters of blood.

On the twelfth day after the operation, however, the patient began to show signs of local peritonitis with a recurrence of the glycosuria. The latter was controlled by an increase in the insulin dosage and a fat-poor diet, but the general condition of the patient remained unsatisfactory. The local peritonitis persisted and the patient began to vomit profusely.

All the drains but one were removed by the tenth postoperative day (April 24). This drain was left in place because it was felt that, owing to the extensive damage to the pancreatic tissue, a slough might develop. The condition continued poor during the third and fourth postoperative weeks and it was necessary to give the patient a transfusion of 500 cc. of unmodified whole blood as a supportive measure. The vomiting gradually subsided but there was very little improvement in his general condition. During the fifth postoperative week several moderate hemorrhages occurred through the abdominal wound, thus giving rise to the suspicion that a pancreatic slough was forming. The sinus was probed with uterine dressing forceps and a soft loose mass of tissue was encountered deep down within the abdominal cavity. The sinus was investigated again the following two days, and on the third day, May 20, the slough had become entirely free and was removed by forceps.

The pathologist reported that the specimen was pancreas, measuring 17.5 by 3 by 1 cm. The head, neck, body and tail of the organ could be definitely identified. It was of mottled brown, gray and red and of a cheesy consistency. On section, the cut surfaces showed extensive hemorrhagic necrosis, accompanied by purulent changes in most of the parenchyma. On microscopic examination only remnants of normal pancreatic tissue could be recognized. The major portion of the parenchyma and peripancreatic fat were the seat of necrosis and

suppuration. The pathologic diagnosis was pancreatic necrosis with suppuration.

Postoperative Course.—Following the removal of the pancreatic slough, the wound healed rapidly and the patient improved steadily. He was discharged from the hospital with no evidence of diabetes or pancreatitis, June 14, eight weeks after admission. On the day of his discharge from the hospital, the urine and blood sugar values were normal, although the patient had been on a nondiabetic diet without insulin for some time. He was therefore instructed to continue on a similar regimen at home.

About two weeks later he began to feel drowsy and restless and noted that his appetite and desire to drink had increased markedly. A blood sugar determination at that time revealed 350 mg. of sugar per hundred cubic centimeters, and a urinalysis showed 4.7 per cent of sugar. He was immediately placed on a carbohydrate diabetic diet and received 60 units of insulin daily. His condition improved slowly during July and August, so that by the beginning of September he was almost entirely symptom free and was able to control his diabetes by dietary measures alone. He maintained a weight of 131 pounds (59.4 Kg.) during August and September.

The morning of September 27, he began to have severe epigastric pain. He vomited his lunch, following which the pain became worse and spread throughout the midabdominal region. He was readmitted to the hospital that evening and on examination showed marked hyperesthesia of the left lower quadrant (pancreatic zone) with rebound tenderness and marked tenderness to palpation in that region. During the following four days the pain became localized in the right upper quadrant. The impression was that a pancreatic abscess had formed or was in the process of localization. For one week, he received forced fluids with very little food by mouth. The abdominal pain was alleviated by hot applications.

Second Operation.—October 3, one week after admission, a laparotomy was performed. An incision, parallel and just to the left of the previous incision, was made and the peritoneal cavity was opened. After separating adhesions which had formed, the palpating finger felt a retroperitoneal boggy mass, the size of a lemon, located beneath the duodenum. An aspirating needle was inserted into the mass and pure pus was withdrawn. Dressing forceps were next inserted into the mass and about 8 ounces (240 cc.) of thick yellow odorless pus was evacuated. A soft rubber tube was placed into the abscess cavity and the abdomen was closed. The patient reacted well for the first few hours but went into shock that same evening. The condition, however, was almost immediately relieved by the intravenous administration of 500 cc. of 10 per cent dextrose. On inquiry, it was discovered that the patient had received orange juice and insulin shortly before the onset of shock. On examining the dressings of the abdominal wound, it was found that they were saturated with orange juice. This established the fact that a duodenal fistula had formed. Furthermore, the failure to ingest the orange juice, which was meant to cover the insulin dose, resulted in hyperinsulinism, which undoubtedly explained the concurrent shock episode.

An attempt was made to feed the patient through a duodenal tube inserted through the mouth. This was unsuccessful and in order to prevent inanition, a jejunostomy was performed, October 5, and a jejunostomy tube sewed into place. The patient withstood the procedure exceptionally well, became more alert, did not complain of pain, and remained afebrile from the fifth day following the drainage of the abscess. Feedings were given through the tube every two hours, in this way maintaining a satisfactory state of nutrition.

The administration of insulin was instituted immediately after the drainage of the pancreatic abscess. The amount of insulin administered was determined by daily blood and urine sugar analyses. The blood sugar never exceeded 166 mg. per hundred cubic centimeters and the urinary sugar was never greater than 1 per cent. On the fifth day after the operation for the pancreatic abscess, insulin was discontinued. On the eighth postoperative day the urine and blood sugar values were normal. On the seventh postoperative day all the drains were removed from the wound and only a slight serous discharge was noted.

During the third postoperative week the duodenal fistula had completely closed. The jejunostomy tube was removed and the patient was given food by mouth for the first time since the jejunostomy. The jejunostomy opening closed spontaneously on the fourth day after the removal of the tube. The patient was discharged from the hospital four weeks after the second admission.

He was last seen, Jan. 10, 1933, and found to be in good health and gaining in weight on a full diet, accompanied by 15 units of insulin daily.

COMMENT

There are several interesting features that make this case unique. Textbooks on pathology just mention in passing that in pancreatic necrosis the entire organ may slough, but they give no specific reference to cases that could be considered similar to the one here described. A review of the literature on this subject reveals only one report of a case, described by Colp,¹ in which he found the "greater part of the pancreas" sloughed out of its bed, but the author does not state how much of the pancreas was sequestered. This patient recovered after 110 days of illness. There have been other cases reported in which the entire pancreas sloughed out of its bed; but in none of these did the patient recover, and in most of them the observation was made on post-mortem examination. Thus, in Chiari's² case, in which portions of the organ were passed by rectum, the main mass was discovered at autopsy. More recently, Grant³ reported two cases in which, at operation, the entire or major portion of the pancreas was found lying free in the abscess cavity. In neither of these cases, however, did the patient survive.



Appearance of sloughed pancreas: A, tail; B, body; C, neck; and D, head.

Another unique feature in this case is the fact that, in spite of the loss of what appeared to be almost the entire pancreas, carbohydrate metabolism was never very seriously disturbed. Whatever derangement occurred was easily corrected by special diet and by only moderate doses of insulin.

It is to be noted, too, that at no time during his illness was there any demonstrable disturbance of pancreatic digestive function. Although the greater part of the pancreas had sloughed, repeated examinations showed well formed, yellow stools with no undigested food particles. Furthermore, despite the grave complications (abscess formation and duodenal fistula necessitating a jejunostomy) which occurred during the diabetic state, the patient made an excellent recovery.

The necessity of an early diagnosis of pancreatitis was pointed out by one of us⁴ in 1917 and again⁵ in

1929. This point is again illustrated in the present case. In reviewing the past history of our patient, one can say with a fair degree of certainty that the disease process might have been arrested much earlier had the two previous attacks of mild pancreatitis been recognized at the time.

CONCLUSIONS

An exceptional case of acute necrosis of the pancreas is reported in which almost the entire organ was spontaneously extruded through the drainage wound. Despite the great loss of pancreatic tissue and grave complications that arose (abscess formation and duodenal fistula followed by a jejunostomy), the carbohydrate metabolism and pancreatic digestion showed remarkably little impairment, the patient ultimately making an excellent recovery.

555 Prospect Place.

DISSECTING ANEURYSM OF THE AORTA

REPORT OF CASE DIAGNOSED DURING LIFE

FREDERICK KELLOGG, M.D.

WITH A PATHOLOGIC STUDY BY
ALFRED HENRY HEALD, M.D.

SAN FRANCISCO

Gager,¹ in 1928, collected 402 cases of dissecting aneurysm from the German and the English literature, five of which were diagnosed ante mortem. More recently, Vaughan and Irons² have each diagnosed a case ante mortem. Ettling³ has correctly diagnosed six cases of traumatic dissecting aneurysm before death. The clinical features have been excellently described by Gager,¹ the four primary ones being a sudden onset usually following strain; a severe, continuous pain like that of coronary occlusion, and often with significant distribution in that it progresses with the dissection; anomalies of the circulation such as inequality or absence of arterial pulsation in various regions, and the effects of disturbed circulation in other organs or parts of the body. Four fifths of the instances occur after the age of 40, the incidence being twice as great in men as in women. Sixty-five per cent of the victims die immediately from complete rupture of the aneurysm. Another 15 per cent die suddenly in a few days. The remainder have a good chance of recovery.

The following case presented typical symptoms and signs, which led to the correct diagnosis before death:

REPORT OF CASE

History.—R. W., a man, aged 59, married, of Irish and English parentage, a sheet metal worker, felt perfectly well until shortly after arising on the morning of entry. Suddenly, without exertion, he began to have severe, constant constricting pain in both sides of the lower part of the chest, with radiation straight to the spine but not to the shoulders. The pain rapidly descended into the abdomen, the hips and the left leg. He went to bed, and shortly thereafter his left leg became cold, numb and paralyzed. The right leg was similarly affected to a slight degree. The pain in his chest gradually disappeared, but the pain in the abdomen and in the left thigh and hip persisted.

From the Departments of Medicine and Pathology, University of California Medical School.

1. Gager, L. T.: The Symptoms of Dissecting Aneurysm of the Aorta, *Ann. Int. Med.* 2: 658-664 (Jan.) 1929.

2. Quoted by Samson, P. C.: Dissecting Aneurysms of the Aorta, Including the Traumatic Type: Three Case Reports, *Ann. Int. Med.* 5: 117-130 (Aug.) 1931.

1. Colp, Ralph: *Ann. Surg.* 91: 392 (March) 1930.

2. Chiari, H.: *Wien med. Wchnschr.* 30, 1880.

3. Grant, J. W. G.: Hemorrhagic Pancreatitis, *Brit. M. J.* 2: 1084 (Dec. 12) 1931.

4. Linder, William: The Diagnosis of Acute Pancreatitis, *J. A. M. A.* 69: 718 (Sept. 1) 1917.

5. Linder, William, and Morse, L. J.: *Ann. Surg.* 90: 357 (Sept.) 1929.

The patient's mother and sister had died following a succession of "strokes" when 65 and 50 years of age, respectively.

The patient had lived in New Zealand until he was 37 years of age; since then he had lived in San Francisco. His habits had been temperate. He had enjoyed good health save for an attack of pleurisy when he was 44. He stated that nothing abnormal was found in an examination for life insurance eight years before. Two years before he had been told that he had a hypertension of "180." Since then he had had occasional epistaxis and had been more irritable. He had been unemployed for several months and had been worried about the financial situation of his family.

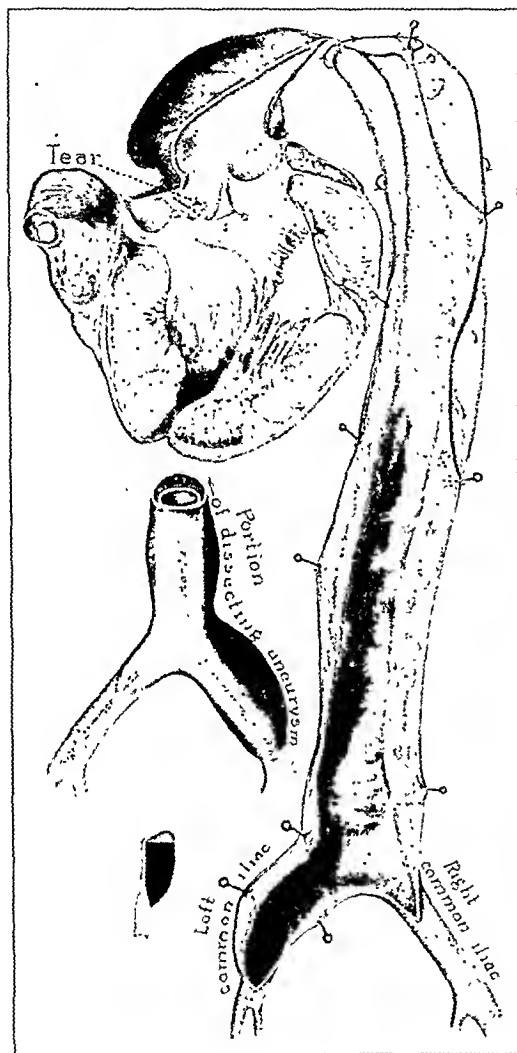


Fig. 1.—The heart, aorta and common iliac arteries. The small intimal tear in the first portion of the aorta is shown, with the extent of the dissecting hemorrhage and the collection of blood at the bifurcation and in the wall of the left common iliac artery. The wide distention of the separated media by blood in the latter regions bulged the intima inward and functionally obstructed the natural lumens.

Examination.—At entry, four hours after the onset of pain, the patient was suffering from intense pain in the left side of the abdomen and in the left leg. He lay flat in bed and was unable to move the left leg. He appeared poorly nourished; his color was pale and sallow. There was moderate arcus senilis. The pupils were equal and regular and reacted to light. Complete upper and lower false dentures were present. In the neck, neither adenopathy nor abnormal pulsation was present. The lungs were resonant throughout. The voice and the breath sounds were normal. Râles were not heard.

The heart was slightly enlarged to the left. A short, rough systolic murmur was heard at the apex. The aortic second sound was accentuated. The rhythm was regular at 110 beats

a minute. The radial arteries were moderately thickened. Pulsation was felt in the abdominal aorta but not in any arteries of the legs. The veins of the neck, the legs and the penis were slightly distended.

The blood pressure was 208 systolic, 154 diastolic in both arms. Pressure readings were not obtainable in the legs.

Moderate abdominal distention was present. Bladder dulness extended half-way from the symphysis pubis to the umbilicus. There was general abdominal tenderness, most marked in the left flank. The liver and spleen were not palpable.

The left leg was almost completely paralyzed. The skin over it was cold and discolored with a purplish mottling and was somewhat anesthetic. The knee jerk was sluggish on the right and absent on the left side. The plantar reflex was normal on the right and absent on the left.

Laboratory examination of the blood revealed that the hemoglobin was 125 per cent (Sahli). There were 6,200,000 red blood cells and 23,000 leukocytes per cubic millimeter. The differential count was normal. The clotting time was four and one-half minutes (Lee and White). The specific gravity of a catheterized specimen of urine was 1.011. A trace of albumin was present. The Wassermann and Kahn tests of the blood were negative. Roentgenograms of the chest appeared normal. An electrocardiogram showed a left axis deviation and flattened diphase T waves in lead I.

Course.—Within two hours the discoloration had extended from the left leg up onto the abdomen. The right foot became cold. The cardiac sounds became poorer in quality.

Seven hours after entry the brachial blood pressure was 120 systolic, 104 diastolic. The venous pressure was estimated at 25 centimeters of water.

Ten hours after entry the systolic blood pressure was 114 in the arms.

On the second day, cyanosis of the face, hands and genitalia became pronounced, and gangrene of the left leg set in. The systolic blood pressure was 118. Only 50 cc. of urine was obtained by catheterization. Respirations became difficult, the pulse became imperceptible and the patient died of circulatory failure on the afternoon of the second day.

It was evident that the blood supply to the lower part of the body had been acutely obstructed. In the differential diagnosis, a thrombus riding the bifurcation of the aorta, an embolus blocking a coarctation of the aorta, and a dissecting aneurysm of the aorta were considered. The absence of cardiac arrhythmia or valvular disease made it difficult to explain the origin of a thrombus. Such a thrombus might come from a previous "silent" coronary occlusion, from a large arteriosclerotic plaque, or from a broken off portion of tumor that had invaded the aorta. These possibilities were unlikely. Coarctation of the aorta was ruled out because of the absence of signs of collateral arterial circulation and the negative roentgen signs. The arterial obstructive symptoms could be explained by the collapse of the inner coats of the aorta by compression of a layer of blood, forced along between the layers of the wall. This would account for the spreading character of the pain.

A clinical diagnosis of dissecting aneurysm was made the day of entry because of (1) the sudden onset of pain, which was progressive in character, spreading to the left lower extremity; (2) the evidence of interference with the arterial circulation to the lower part of the body, and (3) the supportive family history of vascular disease and the past history of hypertension.

Postmortem Examination. (performed forty-five minutes after death).—The left lower extremity was purplish blue, and dry gangrenous changes were noticeable in the skin of the foot. The right lower extremity showed early changes of a similar nature.

The viscera in general showed only intense recent congestion. The kidneys had some cortical narrowing and subcapsular scarring of the type associated with arteriolarsclerosis and hypertension.

The pericardial sac was normal. The heart weighed 420 Gm. The left ventricle was enlarged, rounded and thickened; the maximum thickness of the ventricular wall was 2.4 cm. The

coronary arteries were moderately sclerotic and tortuous. The subepicardial fat at the base of the ventricles was heavily infiltrated by fresh extravasated blood. This extravasation, which continued about the great vessels and into the myocardium of the auricles and interauricular septum, arose in the wall of the root of the aorta from a dissecting aneurysm, which was found in the posterior wall of the aorta throughout its length. The line of dissection was within the media, the hemorrhage having separated an are varying from 100 degrees in the arch to 300 degrees in the lower abdominal portion. Many of the intercostal, renal and lumbar branches of the aorta appeared as inner tubes, traversing the blood-filled space within the media.

The dissecting hemorrhage did not extend into the larger branches of the aortic arch. It greatly distended the separated media at the bifurcation of the aorta and extended down the length of the left common iliac artery. A large pool of recently clotted blood had collected within the media in this lower region, causing an inward bulging of the intima, which served functionally to close the natural lumens. This functional closure at the bifurcation, particularly of the left common iliac artery, explains the clinical symptoms and circulatory changes in the lower part of the body.

A small transverse tear of the intima and upper media was found behind the right posterior aortic cusp of the semilunar valve. This rupture, about 7 mm. long, occurred through a small atheromatous ulcer. The rupture communicated freely with the dissected, hemorrhage-filled media and could well have been a point of origin for the dissecting blood. The tear might equally well have occurred through the weakened intima after distention of the separated media by hemorrhage originating in the vasa vasorum.

The aorta as a whole was quite inelastic and overstretched, both transversely and longitudinally. When measured, after fixation with formaldehyde, the inner circumference at the root was 6.7 cm.; in the mid thoracic region, 6.2 cm.; in the abdominal portion, 5.3 cm. This places the width in the thoracic and abdominal regions as decidedly above the upper limits

situated at the openings of branches in the abdominal region were undergoing calcification.

Microscopic Examination.—Heart: Sections from the base of the heart revealed interstitial infiltration of extravasated blood. A large coronary artery showed intimal and medial sclerosis with narrowing of the lumen. Small arterioles showed

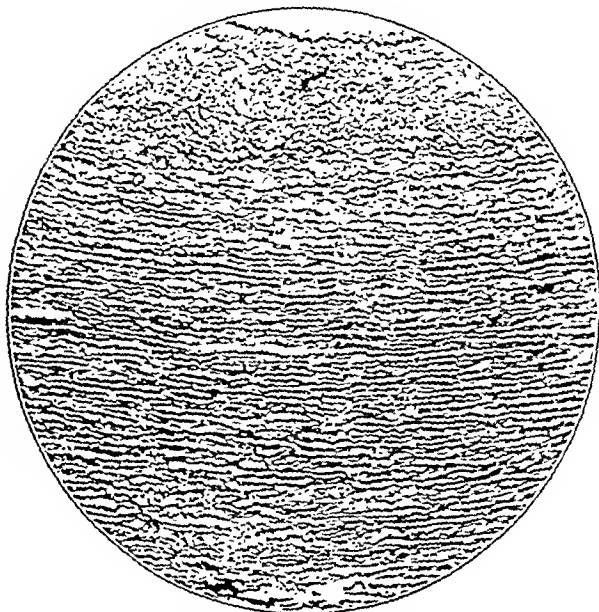


Fig. 3.—Section of wall of a normal aorta from a young woman, taken with the same magnification for comparison with figure 2. The orderly, concentric, numerous and relatively thick elastic lamellae of the media are clearly demonstrated.

a similar narrowing, with scattered small neighboring zones of myocardial replacement fibrosis. The striations of the muscle fibers were quite faint, and many cell bodies showed transverse fractures and a fraying out of the fibrils in the way believed to be associated with myocardial failure.

Aorta: Sections taken from the aorta at various levels showed similar changes. The intima showed scattered thickening by atheromatous material and collagenous fibrous tissue. The internal elastic lamella, as shown by Weigert elastic tissue staining, was fragmented, often reduplicated and frequently indiscernible as a distinct structure. Fat droplets were demonstrated in the intima by schiarlach R staining and in an occasional wandering cell in the other coats of the vessel.

The elastic lamellae of the media were greatly reduced in number, individual thickness and continuity. They were remarkably fragmented and frayed out. There was hyaline degeneration and atrophy of the smooth muscle elements with little if any change in their number. There was an increase in the amount of collagenous fibrous tissue, and this showed hyalinization. Many vasa vasorum were obliterated and others had thickened walls and intimal endothelial proliferation, serving to reduce further the narrowed lumens. The separation of the media was found to be at about the juncture of the middle and outer thirds, and at the level to which the thickened vasa vasorum were seen to penetrate. The adventitia showed a recent and light infiltration of polymorphonuclears and mononuclear phagocytes.

Figures 2 and 3 are reproductions of photomicrographs taken at identical magnifications of the aorta in this case and a normal aorta. They illustrate the contrast in the number and condition of the medial elastic lamellae.

Comparison Studies of the Pars Media.—The elastic lamellae of the media were counted in sections taken from various portions of the aorta. The number varied from thirty-four in the region of the arch to forty-two at the level of the bifurcation. The average of ten counts was thirty-eight lamellae. In order to estimate by comparison the extent of the changes in the degenerated aorta, sections were examined from the

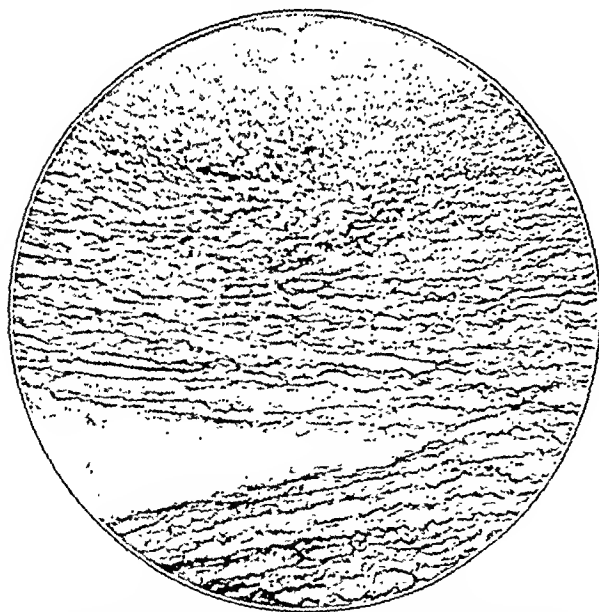


Fig. 2.—Section of wall of the aorta. The dissected cleft in the media is shown. The reduced number, the disorder, the thinning and the fragmentation of the medial elastic lamellae may be seen. Slightly reduced from a photomicrograph with a magnification of 38 diameters.

of normal "senile ectasia," as set forth in the tables of Aschoff.³ Gross examination revealed the media of the aorta to be unduly separable. The intima contained scattered, raised atherosclerotic plaques of a bluish yellow. A few of these patches

3. Aschoff, Ludwig: Lectures on Pathology: Atherosclerosis, New York, Paul B. Hoeber, Inc., 1924, pp. 131-153.

normal appearing aorta of a woman, aged 18, and from the aortas of five patients, between the ages of 51 and 62, who had died from other diseases incident on arteriosclerosis. The media of the youthful aorta had from sixty-seven orderly concentric elastic lamellae in the region of the arch to sixty-one in the abdominal region, with an average in ten counts of sixty-five lamellae. Maximow⁴ describes the media of the normal aorta as having from fifty to sixty-five elastic lamellae. The sections from the aortas of the five older patients all showed less profound degeneration of the elastic lamellae than in our case. Some of these sections showed local regions with more marked atherosclerotic degeneration of the intima and upper media, but the medial coats as a whole were in better order and the vasa vasorum more healthy and numerous. Counts of the elastic lamellae averaged forty-eight, and the lowest count was forty-four.

COMMENT

Tyson⁵ has recently published a review of dissecting aneurysms of the aorta and presented five new cases. He discusses the pathogenesis. Tyson believes that degenerative changes in the media are essential for the development of a dissecting aneurysm and that these changes are secondary to obliterative changes in the vasa vasorum from arteriosclerosis or other types of low grade inflammation. He concludes that the aneurysm begins by the rupture of one or more vasa vasorum into a weakened medial layer and that a tear of the intima is not essential to formation. In fact, he believes that when intimal tears do occur they are probably secondary to the development of the aneurysm.

Whitman and Stein⁶ have described the degenerative changes in the media in cases of dissecting aneurysms. They quote and corroborate the views of Babes and Mironescu that the condition is almost a disease entity, a dissecting mesaortitis, or what the latter authors have termed a "mesarteritis dissecans." The medial changes described by Whitman and Stein⁶ are essentially those found by Tyson in his cases and by Aschoff³ in "senile ectasia" of the aorta and are the important conditions found in the case reported here. There seems to be little reason to call "mesarteritis dissecans" a separate disease entity, unless to indicate that the culmination, or pathologic end-point, in a given case of arteriosclerosis has been reached in the vasa vasorum of the aorta instead of in the coronary circulation of the heart, the lenticulostriate vessels of the brain, or the cortical arterioles of the kidneys.

There were no indications of the presence of syphilis in this case. The low incidence of syphilitic mesaortitis in cases of dissecting aneurysm has often been commented on. It seems probable that the lesions of syphilis in the aorta, being more focal in their intensity, lead to a localized rather than a generalized weakening of the wall.

SUMMARY

1. A correct clinical diagnosis of dissecting aneurysm of the aorta was made in a case on the day of entry to the hospital. This diagnosis was made because of (a) the sudden onset of pain, which was progressively spreading in character; (b) the evidence of interference with the arterial circulation to the lower part of the body, and (c) the supportive family history of vascular disease and the past history of hypertension,

2. Necropsy revealed a dissecting aneurysm in the medial coat of the entire length of the aorta and the left common iliac artery, in association with a generalized arteriosclerosis and a hypertensive type of left ventricular cardiac hypertrophy.

3. The dissection of the media was facilitated by an extensive obliterative sclerosis of the vasa vasorum, which led to its profound degeneration. The reduction in number of elastic lamellae amounted to about 40 per cent, when directly studied in comparison with the normal aorta of a young adult. It was also found that the degeneration of the media was greater than that in the aortas of five patients who died from other diseases incident on arteriosclerosis.

4. Additional support is given the theory that dissecting aneurysms are the result of an increased separability of the media due to its profound degeneration. This degeneration is not a disease entity but is secondary to arteriosclerosis, which has reached a summit in the nutrient arterioles of the aorta, rather than in the more frequent sites of the heart, brain or kidneys.

Parnassus and Third Avenues.

DIFFUSE INTRATUBULAR TUBERCULOSIS OF THE HUMAN TESTICLE

EDWIN F. HIRSCH, M.D.

CHICAGO

When tuberculosis of the testis was first accepted as a disease, caseation was taken as the diagnostic criterion and gross examinations alone sufficed. Such a standard for diagnosis, of course, did not separate tuberculosis from other caseous diseases. Later, when the histologic structure of tuberculous lesions was established, the microscopic examinations and the demonstration of acid-fast bacilli in characteristic tissue lesions became the standards of reference. In 1877, Gaule¹ stated that there were two interpretations of the genesis and composition of testicular tuberculosis. The first was from Virchow, who noted the testicle tubercle always as a small gray translucent nodule similar in structure to the miliary tubercles of other viscera and the larger lesions as conglomerates of these smaller nodules; the other from Rindfleisch, who described larger spherical caseous nodules which conglomerated into groups, became confluent and formed lesions with an irregularly nodular or branched configuration. According to Rindfleisch, the spherical caseous nodules did not arise from miliary lesions but formed by a successive growth of vascular interstitial tissues and their fibrous organization. The fibrous texture persisted as long as caseation had not occurred.

Among the older writers, opinions diverged on whether the caseous masses lay within the seminiferous tubules or between them. According to Gaule, the first was proposed by Carswell and Heath, while Curling and A. Cooper believed that tuberculous material could be deposited as well within as without the tubules, and von Herff in 1855 demonstrated that the tubules

Aided by the Winfield Peck Memorial Fund.

From the Henry Baird Favill Laboratory of St. Luke's Hospital, and the Norman Bridge Pathological Laboratory of Rush Medical College of the University of Chicago.

1. Gaule, Justus: Anatomische Untersuchungen über Hodentuberkulose (Phthisis testis), Virchows Arch. f. path. Anat. 69: 64-92, 213-245, 1887.

4. Maximow, A. A.: Textbook of Histology, Philadelphia, W. B. Saunders Company, 1930.

5. Tyson, M. D.: Dissecting Aneurysms, Am. J. Path. 7: 581-604 (Nov.) 1931.

6. Whitman, R. G., and Stein, H. B.: A Contribution to the Pathogenesis of Dissecting Aneurysms of the Aorta, J. M. Research 44: 579-591 (Sept.) 1924.

extended into nodules of the testis, communicated with the cavities there, and were filled with caseous material. Gaule's further discussion centered on the intratubular and interstitial spread of the infection. Waldstein,² in 1881, reviewed the opinions on the interstitial and intratubular spread of tuberculosis advanced by the various authors and reduced his conclusions to a statement that tuberculosis of the testis is an inflammatory process characterized at first by focal lesions. Waldstein emphasized the studies of von Herff, who was the first to localize the process of tubercle formation in the testis in a precise way and who differentiated between an interstitial variety and a true tuberculosis of the testis which progressed with deposits in the interior of the tubules. Federmann³ investigated the behavior of the elastic tissues in testicular tuberculosis and syphilis. Of the tuberculous testes which he studied, fifteen were classified as canalicular and two as interstitial. He found the inception of the changes of the canalicular form in the tubular epithelium, usually as a hyperplasia of the cells lying close to the wall. He noted two varieties: In the one form, which included almost all of his material, the entire tubule was filled with a conglomerate mass of epithelial, round and spindle cells, often with fatty changes. The tubule was markedly dilated. This cell hyperplasia commonly extended beyond the disrupted elastic wall of the tubules and into the interstitial tissues. In the second, rarer, form, the central part of the canal lumen contained epithelial cells in regular order or slightly compressed. Around these was a marked tissue hyperplasia far beyond the original elastic wall but like the preceding form. The tuberculous granulation tissues had extended from the basal portions of the tubule epithelium and had left intact the central epithelial cells, or the reactions had started from the connective tissue wall and had displaced inwardly the entire epithelial lining. Meyer⁴ also reported a similar study of the intracanalicular form of testis tuberculosis and described essentially the same results. He noted interstitial tubercles even in the very pure intracanalicular forms of testis tuberculosis. Hueter's⁵ discussion of the spread of genital tuberculosis mentioned many proponents and opponents of the spread of the disease against the secretion stream. The adherents of the antisection theory, he stated, had in their favor the facts that tuberculous epididymitis antedated the testicular tuberculosis and that in the spread of tuberculosis from the prostate and seminal vesicles the epididymis was involved before the testis. He concluded that the changes in tuberculosis of the testis and epididymis were intracanalicular as well as interstitial.

Baumgarten,⁶ by injecting tubercle bacilli directly into the testes of rabbits, produced interstitial lesions. The lumens of the tubules surrounded by the granulation tissues became smaller; the tubular epithelial linings became indefinite and finally disappeared. Baumgarten did not observe an ascending infection and considered the lesions produced in these animals similar to those in man with hematogenous or lymphogenous

dissemination. Kraemer⁷ injected tubercle bacilli into the vas deferens of rabbits and noted a cessation of spermatogenesis after four weeks. The initial changes were intratubular and from here the inflammation spread into the surrounding tissues. Kraemer concluded that obstruction spread the infection into the terminal portions of the testicular tubules.

A recent summary by Oberndorfer⁸ stated that in the tubules of the testis, as in other epithelial lined canals, the tubercle bacilli presumably at first stimulate reactive changes immediately beneath the epithelium and then in the epithelium. The initial changes, subepithelial but within the membrana propria, may be slight, purely exudative, limited to a few round cells, and not distinctive. A hyperplasia of the connective tissue cells follows promptly. Finally the canal lumen becomes filled with masses of desquamated epithelium, round cells, leukocytes or, gradually, granulation tissues. The epithelium, at first lifted up from



Fig. 1.—Surfaces made in bisecting the body of the testis, showing lobular divisions, diffuse and even distribution of the tissue changes, and absence of tubercles. Scale in millimeters.

below, is more and more completely destroyed and the tuberculous inflammation for some time is held in restraint by the elastic fibers of the basal layer. This, too, gradually is destroyed.

Intratubular forms of testicular tuberculosis, according to these summary statements, are recognized generally and have been studied with care. Testes with this form of tuberculosis doubtless progress into the chronic stages with caseation and fistulas or extensive scar tissue contraction and become so altered by the destructive disease that the initial characteristics are lost. The gross descriptive portions and the histologic details of many of the published reports of testicular tuberculosis, however, fail to mention as exquisitely a diffuse intratubular form of testicular tuberculosis as the fol-

2. Waldstein, Louis: Zur Kenntniss der tuberkulösen Erkrankungen des Hodens, *Virchows Arch. f. path. Anat.* 83: 399-445, 1881.

3. Federmann, Adolf: Tuberkulose und Syphilis des Hodens in Bezug auf das Verhalten des elastischen Gewebes, *Virchows Arch. f. path. Anat.* 165: 469-479, 1901.

4. Meyer, F. K. A.: Die intracanalikuläre Form der Hodentuberkulose, Untersuchungen mit Weigert's Elastin Färbung, I. D. Würzburg, 1902.

5. Hueter, C.: Ueber Ausbreitung der Tuberkulose im männlichen path. Anat. u. z. allg. Path. 35: 252-302, 1904.
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7. Kraemer, C.: Experimental Beiträge zum Studium der Hodentuberkulose, *Verhandl. d. deutsch. path. Gesellsch.* 3: 94-98, 1901.

8. Oberndorfer, S.: Die inneren männlichen Geschlechtsorgane, in Henke, Friedrich, and Lubarsch, Otto: *Handbuch der speziellen pathologischen Anatomie und Histologie*, Berlin, Julius Springer 6: 647 (part 3), 1931.

normal appearing aorta of a woman, aged 18, and from the aortas of five patients, between the ages of 51 and 62, who had died from other diseases incident on arteriosclerosis. The media of the youthful aorta had from sixty-seven orderly concentric elastic lamellae in the region of the arch to sixty-one in the abdominal region, with an average in ten counts of sixty-five lamellae. Maximow⁴ describes the media of the normal aorta as having from fifty to sixty-five elastic lamellae. The sections from the aortas of the five older patients all showed less profound degeneration of the elastic lamellae than in our case. Some of these sections showed local regions with more marked atherosclerotic degeneration of the intima and upper media, but the medial coats as a whole were in better order and the vasa vasorum more healthy and numerous. Counts of the elastic lamellae averaged forty-eight, and the lowest count was forty-four.

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There were no indications of the presence of syphilis in this case. The low incidence of syphilitic mesaortitis in cases of dissecting aneurysm has often been commented on. It seems probable that the lesions of syphilis in the aorta, being more focal in their intensity, lead to a localized rather than a generalized weakening of the wall.

SUMMARY

1. A correct clinical diagnosis of dissecting aneurysm of the aorta was made in a case on the day of entry to the hospital. This diagnosis was made because of (a) the sudden onset of pain, which was progressively spreading in character; (b) the evidence of interference with the arterial circulation to the lower part of the body, and (c) the supportive family history of vascular disease and the past history of hypertension,

2. Necropsy revealed a dissecting aneurysm in the medial coat of the entire length of the aorta and the left common iliac artery, in association with a generalized arteriosclerosis and a hypertensive type of left ventricular cardiac hypertrophy.

3. The dissection of the media was facilitated by an extensive obliterative sclerosis of the vasa vasorum, which led to its profound degeneration. The reduction in number of elastic lamellae amounted to about 40 per cent, when directly studied in comparison with the normal aorta of a young adult. It was also found that the degeneration of the media was greater than that in the aortas of five patients who died from other diseases incident on arteriosclerosis.

4. Additional support is given the theory that dissecting aneurysms are the result of an increased separability of the media due to its profound degeneration. This degeneration is not a disease entity but is secondary to arteriosclerosis, which has reached a summit in the nutrient arterioles of the aorta, rather than in the more frequent sites of the heart, brain or kidneys.

Parnassus and Third Avenues.

DIFFUSE INTRATUBULAR TUBERCULOSIS OF THE HUMAN TESTICLE

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CHICAGO

When tuberculosis of the testis was first accepted as a disease, caseation was taken as the diagnostic criterion and gross examinations alone sufficed. Such a standard for diagnosis, of course, did not separate tuberculosis from other caseous diseases. Later, when the histologic structure of tuberculous lesions was established, the microscopic examinations and the demonstration of acid-fast bacilli in characteristic tissue lesions became the standards of reference. In 1877, Gaule¹ stated that there were two interpretations of the genesis and composition of testicular tuberculosis. The first was from Virchow, who noted the testicle tubercle always as a small gray translucent nodule similar in structure to the miliary tubercles of other viscera and the larger lesions as conglomerates of these smaller nodules; the other from Rindfleisch, who described larger spherical caseous nodules which conglomerated into groups, became confluent and formed lesions with an irregularly nodular or branched configuration. According to Rindfleisch, the spherical caseous nodules did not arise from miliary lesions but formed by a successive growth of vascular interstitial tissues and their fibrous organization. The fibrous texture persisted as long as caseation had not occurred.

Among the older writers, opinions diverged on whether the caseous masses lay within the seminiferous tubules or between them. According to Gaule, the first was proposed by Carswell and Heath, while Curling and A. Cooper believed that tuberculous material could be deposited as well within as without the tubules, and von Herff in 1855 demonstrated that the tubules

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extended into nodules of the testis, communicated with the cavities there, and were filled with caseous material. Gaule's further discussion centered on the intratubular and interstitial spread of the infection. Waldstein,² in 1881, reviewed the opinions on the interstitial and intratubular spread of tuberculosis advanced by the various authors and reduced his conclusions to a statement that tuberculosis of the testis is an inflammatory process characterized at first by focal lesions. Waldstein emphasized the studies of von Herff, who was the first to localize the process of tubercle formation in the testis in a precise way and who differentiated between an interstitial variety and a true tuberculosis of the testis which progressed with deposits in the interior of the tubules. Federmann³ investigated the behavior of the elastic tissues in testicular tuberculosis and syphilis. Of the tuberculous testes which he studied, fifteen were classified as canalicular and two as interstitial. He found the inception of the changes of the canalicular form in the tubular epithelium, usually as a hyperplasia of the cells lying close to the wall. He noted two varieties: In the one form, which included almost all of his material, the entire tubule was filled with a conglomerate mass of epithelial, round and spindle cells, often with fatty changes. The tubule was markedly dilated. This cell hyperplasia commonly extended beyond the disrupted elastic wall of the tubules and into the interstitial tissues. In the second, rarer, form, the central part of the canal lumen contained epithelial cells in regular order or slightly compressed. Around these was a marked tissue hyperplasia far beyond the original elastic wall but like the preceding form. The tuberculous granulation tissues had extended from the basal portions of the tubule epithelium and had left intact the central epithelial cells, or the reactions had started from the connective tissue wall and had displaced inwardly the entire epithelial lining. Meyer⁴ also reported a similar study of the intracanalicular form of testis tuberculosis and described essentially the same results. He noted interstitial tubercles even in the very pure intracanalicular forms of testis tuberculosis. Hueter's⁵ discussion of the spread of genital tuberculosis mentioned many proponents and opponents of the spread of the disease against the secretion stream. The adherents of the antisecretion theory, he stated, had in their favor the facts that tuberculous epididymitis antedated the testicular tuberculosis and that in the spread of tuberculosis from the prostate and seminal vesicles the epididymis was involved before the testis. He concluded that the changes in tuberculosis of the testis and epididymis were intracanalicular as well as interstitial.

Baumgarten,⁶ by injecting tubercle bacilli directly into the testes of rabbits, produced interstitial lesions. The lumens of the tubules surrounded by the granulation tissues became smaller; the tubular epithelial linings became indefinite and finally disappeared. Baumgarten did not observe an ascending infection and considered the lesions produced in these animals similar to those in man with hematogenous or lymphogenous

dissemination. Kraemer⁷ injected tubercle bacilli into the vas deferens of rabbits and noted a cessation of spermatogenesis after four weeks. The initial changes were intratubular and from here the inflammation spread into the surrounding tissues. Kraemer concluded that obstruction spread the infection into the terminal portions of the testicular tubules.

A recent summary by Oberndorfer⁸ stated that in the tubules of the testis, as in other epithelial lined canals, the tubercle bacilli presumably at first stimulate reactive changes immediately beneath the epithelium and then in the epithelium. The initial changes, subepithelial but within the membrana propria, may be slight, purely exudative, limited to a few round cells, and not distinctive. A hyperplasia of the connective tissue cells follows promptly. Finally the canal lumen becomes filled with masses of desquamated epithelium, round cells, leukocytes or, gradually, granulation tissues. The epithelium, at first lifted up from



Fig. 1.—Surfaces made in bisecting the body of the testis, showing lobular divisions, diffuse and even distribution of the tissue changes, and absence of tubercles. Scale in millimeters.

below, is more and more completely destroyed and the tuberculous inflammation for some time is held in restraint by the elastic fibers of the basal layer. This, too, gradually is destroyed.

Intratubular forms of testicular tuberculosis, according to these summary statements, are recognized generally and have been studied with care. Testes with this form of tuberculosis doubtless progress into the chronic stages with caseation and fistulas or extensive scar tissue contraction and become so altered by the destructive disease that the initial characteristics are lost. The gross descriptive portions and the histologic details of many of the published reports of testicular tuberculosis, however, fail to mention as exquisitely a diffuse intratubular form of testicular tuberculosis as the fol-

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lowing paragraphs describe. The changes in this testis grossly did not characterize the disease, although obviously the entire body was involved uniformly and equally:

J. S., a white man, aged 37, unmarried, an elevator operator, who entered the urologic service of St. Luke's Hospital, Oct. 23, 1932, in the care of Dr. Andrew McNally, for nine weeks had had a painless swelling of the right testis, initiated by fever for two days, joint pains, and general malaise. On the third day the right testicle was swollen. Bloody mucus was noted in the urine on the first day and several times later. He stated that he had never had syphilitic or gonorrheal infections. He was thin and pale, and the right testis was swollen to the size of a goose egg. This testicle was excised, October 24. He had a slight postoperative fever for several days. The Wassermann and Kahn tests of the blood serum, November 11, were negative. Two guinea-pigs inoculated, November 11, with sediment of a single urine sample and with all the sediment of a twenty-four hour collection, November 29, were examined, Jan. 15 and Jan. 24, 1933. Neither was tuberculous.

The right testis, the epididymis and the funiculus tissues weighed 69 Gm. The testicle was 6.5 cm. long, 3 cm. thick, and 3.5 cm. wide. The epididymis tissues were slightly swollen but there were no obvious changes. The vas deferens was not altered grossly. The tunica albuginea of the testis was pale white and smooth. The surfaces made by bisecting the body of the testis to the mediastinum were firm, tan-brown tissue divided by thin septulas into lobules from 1 to 5 mm. wide (fig. 1). These brown tissues bulged slightly from the compartments, and the surfaces between two septulas were slightly convex. The seminiferous tubules were firmly embedded and could not be drawn out in long tortuous strands as from an undiseased gland.

Histologic preparations of the testis were stained with hematoxylin-eosin, Mallory's aniline blue, van Gieson, phosphotungstic acid-hematoxylin, and Weigert's elastic fiber stains. These histologic preparations demonstrated an exquisitely diffuse intratubular exudate (fig. 2) and a uniform disintegration of practically all the lining epithelium or a retention only of small remnants. The exudates consisted of epithelioid cells, lymphocytes, plasma cells, some fibroblastic tissues, a few polymorphonuclear leukocytes, and occasional Langhans' giant cells (fig. 3). They filled the lumens of practically every tubule, dilated the tubular structures and spread through the wall,

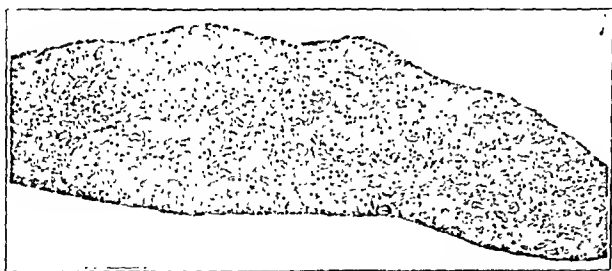


Fig. 2.—Appearance of a histologic preparation under low power to illustrate further the diffuse intratubular distribution of the tuberculous.

fragmenting and separating the concentric laminae of connective tissues. The individual tubules were surrounded by other concentrically arranged fibroblastic tissues and collars of exudate cells, mainly plasma cells and lymphocytes. The interstitial stroma elements were edematous and mainly collagenous fibrils or fibroblastic connective tissue, also infiltrated extensively or moderately by plasma cells and tissue eosinophil leukocytes. Caseation was not conspicuous, although present focally in some of the exudate tissues within the tubules. The few seminiferous tubules without exudates were markedly compressed and had a few large lining cells but no spermatogenesis. Similar tissue changes were present in the epididymis. The lumens of some of the tubules were empty. Others contained exudates of large monocytes (epithelioid

cells) and a few polymorphonuclear leukocytes, and a small number were dilated widely with exudate cells and granulation tissues. The inflammatory changes extended into the surrounding interstitial tissues. Acid-fast bacilli were demonstrated among the exudate cells in the tubules of the epididymis. Monocytic and leukocytic exudates, less abundant, filled the lumen of the vas deferens 10 cm. from the epididymis. The submucosal tissues were edematous and had slight chronic inflammatory cellular exudates.

COMMENT

Histologic examinations were necessary to establish the nature of an extensively diffuse intratubular tuber-

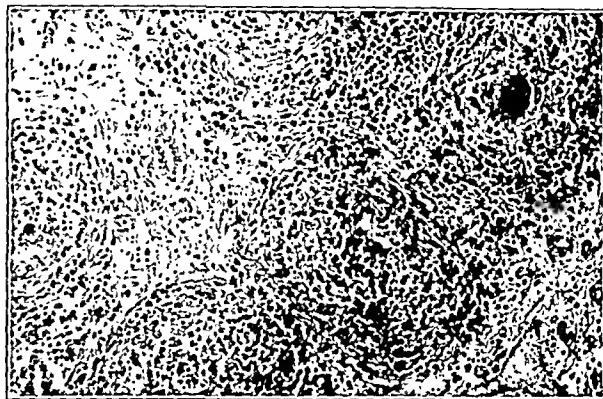


Fig. 3.—Histologic structure and tubular distribution of the tissue changes. Reduced from a photomicrograph with a magnification of 352 diameters.

culosis of the testis. The infection probably was diffused throughout the testicular tubules by an obstructive retrograde spread of tuberculous exudates from the vas and the epididymis. No clinical information is available on which to localize the initial genital tuberculosis beyond the vas: that is, in the seminal vesicles or prostate. The patient, however, had noted a bloody mucus in the urine when the enlargement of the testicle began. The attempts to demonstrate tuberculosis of the urinary tract subsequent to the right orchidectomy were not successful.

Long⁹ and others have noted the marked exudative reaction and subsequent tissue changes in the testes of tuberculous guinea-pigs following the testicular injection of small quantities of tuberculin. Presumably, human tissues manifest a similar allergic response.

The marked cellular reactions in the testis of this patient, accordingly, are the summation of an intratubular tuberculous infection in a sensitized host.

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Purchasing Thimbles in a Jewelry Shop.—At least 80 per cent of the illnesses that occur and practically all of the preventive measures employed are quite within the knowledge and skill of a competent and properly trained practitioner. The specialist is a consultant whose services are relatively rarely required and then usually on the advice of the family physician, who knows when the greater knowledge or skill is essential and where it can be found. As one should not complain about the high cost of thimbles if one insists on purchasing them in a jewelry shop, so there should be but little sympathy over the financial burden of one who employs a specialist to treat a cold and much less for him who periodically subjects his anatomy to a search for the trivial by a battery of highly trained and expensively equipped specialists. —Harvey, S. C.: *Oikonomia Medika, Yale J. Biol. & Med.* 5:323 (March) 1933.

DEXTROSE THERAPY IN DISEASES
OF THE LIVERT. L. ALTHAUSEN, M.D.
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The first clinician to advocate treatment of an hepatic disease with dextrose was A. P. Beddard,¹ in 1908. In 1915, Opie and Alford² and, independently, Graham³ furnished the experimental basis for this therapy by demonstrating that feeding of carbohydrate lessens the susceptibility of rats and dogs to necrosis of the liver caused by chloroform and by phosphorus. Later this was confirmed by Davis and Whipple⁴ for chloroform poisoning, while Davis⁵ demonstrated the same effect in intoxication by carbon tetrachloride.

THERAPEUTIC ADMINISTRATION OF DEXTROSE

In recent years much interest has been shown in dextrose as a remedy for a variety of disorders of the liver. Experimentally, in addition to its protective influence against hepatic poisons, administration of dextrose has been shown to compensate partially for functional deficiency of the liver induced by Eck fistula⁶ and by hepatectomy.⁷ In acute intoxications following intraperitoneal injections of trypsin or photodynamic injury in lethal doses, instillations of dextrose were capable of forestalling the fatal outcome;⁸ likewise in experimental poisoning with the mushroom *Amanita phalloides*, which produces hepatic necrosis closely resembling that of chloroform and of acute yellow atrophy of the liver.⁹

Clinically, Böckelmann¹⁰ observed the beneficial effects of increased feeding of carbohydrate in acidosis of pregnancy, and Blösch¹¹ described the disappearance of lipemia and ketosis after administration of dextrose in patients with diffuse hepatic damage. Of the acute hepatic intoxications in man, beneficial and sometimes brilliant results with dextrose therapy were achieved in subacute yellow atrophy of the liver, in arsphenamine injury, in mushroom poisoning with *Amanita phalloides*, and, as already mentioned, in delayed chloroform poisoning.¹² Among chronic diseases of the liver, good

therapeutic results with dextrose in cirrhosis of this organ were reported by Baehr and Klemperer.¹²

SIGNIFICANCE OF HEPATIC GLYCOGEN

The protective action of diets high in carbohydrate is apparently based on an abundance of glycogen in the liver. Young pups, as shown by Whipple,¹³ are very resistant to chloroform poisoning. Graham³ confirmed this and found that pups had considerably more hepatic glycogen than adult dogs, and that when it was lowered by fasting, phlorhizin, or during normal growth, the animals lost their resistance to chloroform. Davis⁵ observed that "a liver well stored with glycogen is refractory to large doses of either chloroform or carbon tetrachloride." Bollman¹⁴ makes a similar statement in respect to chloroform and to phosphorus.

On the contrary, a low glycogen content of the liver affects unfavorably certain functions of the liver. Diminished tolerance to dextrose follows the reduction of hepatic glycogen.¹⁵ When this is accomplished by fasting or by feeding of diets low in carbohydrate, the reduction of sugar tolerance is in part due to deficiency of insulin. However, there is no such deficiency in animals in which glycogen of the liver is reduced by muscular exercise. Von Noorden and Isaac¹⁶ claim that the reduction in tolerance to dextrose of animals with low hepatic glycogen is due to diminished glycogenogenesis, the rate of which depends on the existing supply of glycogen from which energy for polymerization of dextrose is derived through its transformation into lactic acid. In accord with this theory is the work of Geiger¹⁷ on hibernating frogs, in which marked depletion of hepatic glycogen interferes with the ability of the liver to synthesize lactic acid to glycogen.

Another function of the liver, that related to metabolism of pigments, also becomes disturbed with a decrease in hepatic glycogen. According to the work of Bang¹⁸ with human beings, increased urobilinuria appears whenever carbohydrates in the diet are decreased below a certain level.

Of the greatest importance in deficiency of glycogen in the liver is the impairment of the hepatic function of detoxication. Experimentally, Sansum and Woodyatt¹⁹ found that animals treated with phlorhizin are easier to kill with chloroform than are normal animals; while Davis⁵ and Bollman¹⁴ noticed that such hepatic poisons as chloroform, carbon tetrachloride and phosphorus are more effective in animals with a reduced glycogen content of the liver. Guttman²⁰ found that undernutrition markedly increases the incidence of arsphenamine icterus. Baehr and Klemperer¹² observed similarly that diabetic patients on a low carbohydrate diet stood arsenical therapy poorly and frequently developed jaundice.

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MECHANISM OF ACTION

There are several ways in which dextrose, and the same applies to glycogen, has been proved to have an allaying action in hepatic injury. In the first place, dextrose neutralizes many exogenous and endogenous toxins. This may be accomplished by partial oxidation to less toxic compounds or by complete oxidation to carbon dioxide and water. Another path lies through conjugation to nontoxic glycuronates. The latter is known to occur with cresols, phenols, salicylates, camphor, and many substances containing these compounds (e. g., morphine). Confirmatively, Becher²¹ found that the phenols of the blood are increased, and Sauer²² has shown that the glycuronic acid of the urine is diminished in patients suffering from various types of diseases of the liver.

In the second place, under carbohydrate therapy, repair of the injured liver proceeds much more rapidly. This was demonstrated in dogs by Davis, Hall and Whipple²³ after poisoning with chloroform and by Ravdin²⁴ in experimental obstructive jaundice following removal of the ligature of the common bile duct.

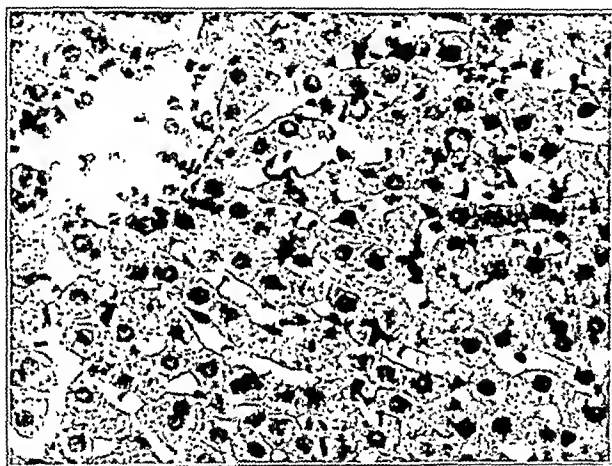


Fig. 1.—Liver of a normal rabbit in which the glycogen level was reduced by fasting to 1.5 per cent; \times 250.

In the third place, administration of dextrose reduces prolonged coagulation time in jaundice.²⁵

EFFECT OF HEPATIC INJURY ON GLYCOGEN

It is unfortunate that, in hepatic disease when the liver is in urgent need of glycogen, its supply of this substance should be low. This was first shown in experimental arsenical and phosphorus poisoning by Rosenbaum²⁶ in 1882 and since then has been confirmed by many observers, including ourselves,²⁷ in hepatic damage due to intoxication with chloroform,

phosphorus and manganese. Ravdin also found marked reduction in the glycogen of the liver in experimental obstructive jaundice.²⁴

The reason for a low level of glycogen in the injured liver is important clinically. In the literature, the statement is frequently made that the damaged liver "loses its ability to store glycogen." If this is correct, therapeutic attempts at increasing the glycogen content of the liver must be useless. However, certain of our experimental data suggest that the lowering of hepatic glycogen may be due, not to an inability on the part of the liver to store glycogen, but to abnormally slow production of new glycogen from noncarbohydrate sources. Such slowing of sugar production by the injured liver is indicated by its inability in experimental animals²⁸ and patients²⁹ with diseases of the liver to compensate for increased sugar utilization in the tissues brought about by injections of insulin. This inability results in hypoglycemia, which takes place in cases of hepatic damage following the administration of certain amounts of insulin and dextrose. The hypoglycemia produced under such conditions is not counteracted by epinephrine, but the blood sugar returns spontaneously to its previous level in the course of several hours. A low glycogen content of the liver in itself does not result in hypoglycemia under such conditions. This has been shown previously by appropriate experiments on normal animals with the hepatic glycogen reduced by fasting and by thyroxine even below the level found in our rabbits with hepatic injury.³⁰ Other evidence of insufficient gluconeogenesis in the injured liver is the well known tendency to lowering of the blood sugar level, which is seen both in experimental animals with hepatic damage and in patients with diseases of the liver. If carbohydrate were produced at a normal rate but could not be retained in the liver as glycogen, one should expect, if anything, an increase in the circulating sugar of the blood.

If the described conception is correct, it means that the glycogen of the liver in hepatic disease is low because there is not enough carbohydrate available for storage as glycogen, in which case administration of dextrose would be the indicated remedy.

NATURE OF HEPATIC GLYCOGEN

The question of the essential nature of hepatic glycogen is of interest to any one attempting to influence the content of glycogen in the liver. The conception of the nature of glycogen passed through three stages and is now entering a fourth stage. Claude Bernard, who discovered glycogen, thought it was a secretion of the liver because he found that it could be produced by this organ on a diet devoid of starches. Later glycogen came to be regarded as a storage product of carbohydrate material, much in the same manner in which fat is regarded as a storage product of lipid material. Recently, the work of Markowitz,³¹ Barbour, Chaikoff, Macleod and Orr³² and others undermined this conception by showing, in the first place, that it is impos-

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sible to rid the liver entirely of glycogen, which should be the case if it were purely a storage product; and, in the second place, that during starvation the amount of glycogen in the liver at first is markedly diminished but later increases again. These facts were responsible for a new theory of glycogen, namely, that it is an essential step in glyconeogenesis, and that the amount of it in the liver at any given time represents the balance between continuous processes of production and loss.

Since then, new experimental data have been obtained. Mouriquand and Leulier³³ and also Forsgren³⁴ found wide variations in the content of glycogen in the normal liver. In addition, Forsgren described a regular daily cycle in the level of hepatic glycogen. This suggested the existence of two kinds of glycogen: one, perhaps, as an obligatory step in the transformation of noncarbohydrate material into dextrose, or, perhaps, as a basal glycogen necessary for the functioning of hepatic cells; the other merely a storage form of carbohydrate available for metabolism in general. Such a dual conception of the physiologic nature of hepatic glycogen finds support in recent experiments of Macleod³⁵ in which decerebration after severance of the parasympathetic pathway to the liver was ineffective in exciting an increased sugar discharge from this organ when the hepatic glycogen was low. The usual hyperglycemia was obtained under these conditions when the content of glycogen was high. The results, according to Macleod, may indicate that the glycogen associated with parasympathetic nerve control, while the glycogen representing a storage form of dextrose can be reconverted into dextrose through other influences.

INCREASING THE GLYCOGEN IN DAMAGED LIVERS

From theoretical considerations and empirical manifestations alike, it is desirable to increase the hepatic glycogen in diseases of the liver. A fair amount of

In normal animals, administration of suitable amounts of dextrose leads directly to deposition of glycogen in the liver. In diseases of the liver, such deposition of glycogen has been denied because the reduction of dextrose tolerance frequently seen in cases of hepatic damage was interpreted as indicating failure on the part of the liver to remove dextrose from the

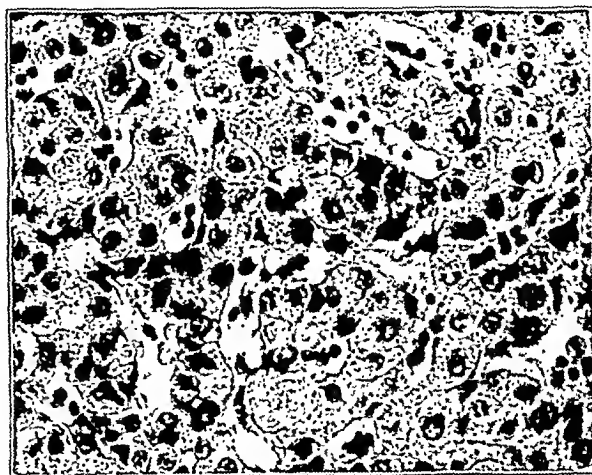


Fig. 3.—Biopsy specimen from the liver of a patient suffering from chronic pancreatitis with obstructive jaundice (duration twenty-five days) and chronic hepatitis. No dextrose was given preoperatively; $\times 250$.

blood for storage.³⁶ For the correction of this condition, insulin is being commonly advocated, especially abroad. I have shown elsewhere²⁷ that at least in experimentally injured livers the addition of insulin to dextrose administration has actually the opposite effect, that of reducing the glycogen content of the liver. In connection with this, it is significant that clinical reports are beginning to appear in which insulin therapy in diseases of the liver is considered "overrated" and "harmful."³⁷

To test the ability of the injured liver to store glycogen, experiments were carried out on rabbits, after poisoning with phosphorus. As previously reported,²⁷ the damaged livers doubled their content of glycogen three hours after a single oral administration of 2.5 Gm. of dextrose per kilogram of body weight. The absolute increase of hepatic glycogen in these experiments was much smaller than in normal rabbits, but the low initial level of glycogen in the liver of the poisoned animals must be taken into consideration because the same was also observed in normal rabbits, in which the glycogen of the liver was markedly reduced by fasting or by medication with thyroxine.

METHODS

A somewhat different series of observations was made on a group of patients with marked subacute or chronic involvement of the liver who were to undergo abdominal operations. These patients received preoperatively various amounts of dextrose orally or by intravenous infusion. A small wedge-shaped piece of the liver was removed in each instance for microscopic examination. In taking such a biopsy for information on the hepatic glycogen, it is well to do it early in the operation, because, as has been shown in animals, the liver loses half of its glycogen after one

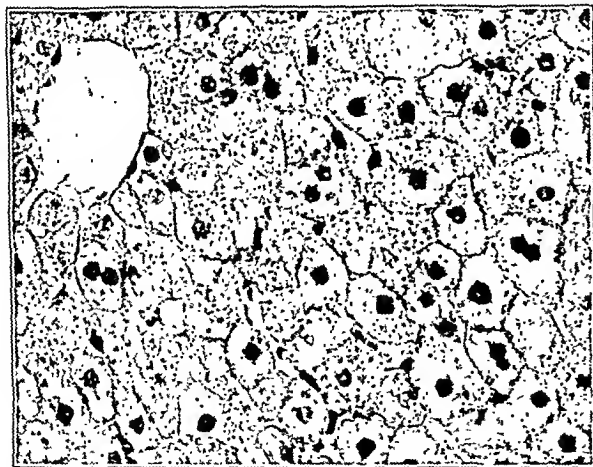


Fig. 2.—Liver of a normal rabbit in which the hepatic glycogen was increased by the administration of dextrose to 10.8 per cent; $\times 250$.

glycogen in the liver signifies that enough carbohydrate is present for detoxication and for other needs of the present and of the immediate future.

33. Mouriquand, J., and Leulier, A.: Recherches expérimentales sur le métabolisme des glucides à l'état normal et au cours de l'inanition, *Compt. rend. Soc. de biol.* 98: 1110 (April 21) 1928.

34. Forsgren, E.: On Relationship Between Formation of Bile and Glycogen in Liver of Rabbit, *Skandinav. Arch. f. Physiol.* 53: 137, 1928.

35. Macleod, J. J. R.: The Control of Carbohydrate Metabolism, *Lancet* 1: 1079 (May 21) 1932.

36. Garnstein, M. A. B., and Swarzmman, H. L.: Observations cliniques sur le traitement insulino-glycosique des affections parenchymateuses du foie, *Arch. d. mal. de l'app. digestif.* 20: 1070 (Nov.) 1930.

37. Brugsch, T.: Die Leber in der Chirurgie, *Zentralbl. f. Chir.* 59: 1578 (June 25) 1932. Büttner: Ueber Leberkoma und Insulin-Traubenzuchernachbehandlung, *ibid.* 59: 1581 (June 25) 1932.

hour of ether anesthesia.³⁸ In the light of Forsgren's work on the cyclic variations of hepatic glycogen, all patients were uniformly fasted over night and operated on in the morning. Most of the biopsies were obtained with the cooperation of Drs. H. G. Bell and J. H. Woolsey, to whom I am indebted.

For a control group, several patients were used from whom biopsies of the liver were obtained prior to 1925,

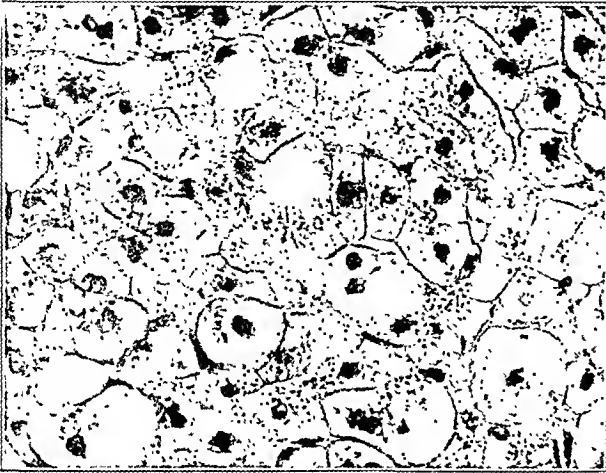


Fig. 4.—Biopsy specimen of the liver in a case of chronic cholangitis with jaundice (duration seven weeks), diffuse hepatitis, and biliary cirrhosis. This patient received dextrose by mouth three times a day for two weeks. The daily dose was 150 Gm. for ten days and 300 Gm. during the last four days. Twelve hours before the operation she was given 75 Gm. of dextrose intravenously; $\times 250$.

when such cases were still treated surgically without an intravenous infusion of dextrose as part of the pre-operative routine.

One group of patients received 50 or 100 Gm. of dextrose by mouth three times a day for from one to two weeks preoperatively. In addition, these patients were given an intravenous infusion of dextrose twelve hours before the operation.

Another group of patients was given two intravenous infusions of dextrose (from 500 to 1,000 cc. of a 10 per cent solution) a day, for from one to five days, the last injection being given on the morning of the operation.

In these three groups, biopsy specimens of the liver with approximately equal degrees of damage were compared microscopically in regard to their content of glycogen. The slides were also compared with sections of rabbit liver containing known amounts of this substance³⁹ (figs. 1 and 2).

No chemical determination of the glycogen content of human livers was attempted because of the small amount of hepatic tissue at my disposal. Moreover, I would have lacked control data on patients who received no dextrose before operation.

RESULTS

Biopsy specimens from fourteen patients in these three groups were examined in the described manner. From a comparison of typical sections reproduced here, it is readily seen that the livers of patients who received no dextrose before operation are almost devoid of glycogen (fig. 3) and closely resemble that of the rabbit with a glycogen content of only 1.5 per cent. The

parenchymatous cells of the liver in these sections are narrow, and their cytoplasm takes a dark stain. The sinusoids and bile capillaries are wide.

On the other hand, the hepatic cells in sections from patients who received large amounts of dextrose by mouth are literally filled with glycogen (fig. 4) and have the appearance of those of the rabbit with 10.8 per cent of glycogen in its liver. In these sections the large, clear, intracellular spaces represent granules of glycogen, and the cells themselves are so distended that the blood and bile channels are compressed.

The cells in the third group, in which the patients received dextrose intravenously, contain only moderate amounts of glycogen (fig. 5), as indicated by their feathery appearance. The probable reason for this is that patients in this group received considerably less dextrose than those in the second group.

My observations prove that even the severely injured liver in the rabbit and in man does not lose its ability to store glycogen but will do so to a marked degree when sufficient exogenous dextrose is provided. This also supports the view that the low level of hepatic glycogen in diseases of the liver is due to a shortage of carbohydrate in the body, caused by slowing of the transformation of noncarbohydrate material into dextrose. When enough sugar is supplied to relieve the persistent demand on the liver for more carbohydrate, this organ at once begins to store glycogen. The fact that lipemia, ketosis and relative hypoglycemia are observed in cases of hepatic disease and also in starvation is another link in this chain of evidence that in diseases of the liver there is an internal hunger for carbohydrate.

INDICATION FOR DEXTROSE THERAPY

Administration of dextrose is indicated when it is desired: (1) to reduce the working load of the liver; (2) to correct metabolic derangements due to hepatic

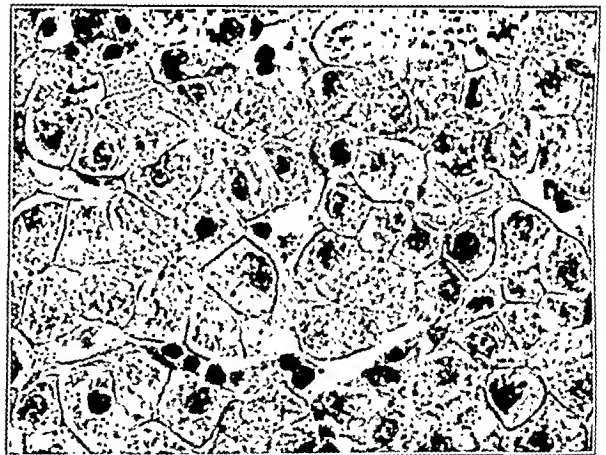


Fig. 5.—Biopsy specimen from the liver of a patient with severe catarrhal jaundice (duration twenty-three days). This patient was given 200 Gm. of dextrose daily for five days by the intravenous route; $\times 250$.

insufficiency; (3) to aid detoxication, especially if the toxins are of unknown origin and cannot be otherwise eliminated; (4) to favor rapid regeneration of hepatic parenchyma, and (5) to shorten prolonged coagulation time in jaundice. One or more of these indications are present in all primary diseases of the liver and also in cases of secondary functional hepatic insufficiency.

It is desirable to give to patients with hepatic disease rather large amounts of dextrose because, by supplying

38. Evans, C. L.; Tsai, Chiao, and Young, F. G.: The Behavior of Liver Glycogen in Experimental Animals: I. Methods: The Effect of Ether and Amytal. *J. Physiol.* 73: 67 (Sept.) 1931.

39. The whole liver of these animals was macerated in boiling potassium hydroxide and duplicate aliquot portions were analyzed by the method of Pflüger and Bertrand.

enough of it for all energy requirements, one is sparing the liver the effort of producing dextrose from non-carbohydrate sources. The human body at rest requires 30 calories or 8 Gm. of dextrose per kilogram of weight. An individual weighing 70 Kg. needs, thus, 560 Gm. of dextrose. Assuming that daily about 300 Gm. of carbohydrate can be readily obtained from the diet, there remains 260 Gm. of dextrose which can be supplemented advantageously. This figure will be higher if the patient is permitted physical activity. Sections from the liver of patients who received dextrose in amounts satisfying all energy requirements demonstrate by their high content of glycogen that the desired objective had been reached.

METHODS OF ADMINISTRATION OF DEXTROSE

The best way of giving dextrose to patients with hepatic disease is by means of a high carbohydrate diet with additional feedings of from 50 to 100 Gm. of dextrose in fruit juices three times a day. More dextrose can be given with ease by mouth than in any other way. In rectal administration of dextrose the amount absorbed when it is given in dilute solution is too small or uncertain, whereas concentrated solutions are irritating to the colon.

Intravenous instillation of dextrose, as shown by Simici, Popescu and Craifaleanu⁴⁰ is, from the point of view of an increase in hepatic glycogen, equally but not more efficacious than a similar oral dose. On the other hand, deposition of glycogen in the heart and the skeletal muscles is greater with the use of the intravenous route and may be advantageous in diseases of these organs. However, in diseases of the liver, intravenous administration of dextrose is to be preferred only when emesis or some other cause makes the oral route unavailable. In my opinion, this deserves emphasis because in many hospitals the intravenous instillation of 500 cc. of a 10 per cent solution of dextrose has become such an established routine for a variety of conditions that many interns and physicians have almost forgotten that dextrose can enter the body in any other way. The result is that patients receive 50 Gm. of dextrose a day by vein when they could have been given 300 Gm. by mouth with less discomfort.

Continuous intravenous infusion of dextrose solutions over a period of several days is a procedure that should not be undertaken lightly, owing to the necessity of dissecting a cubital vein for the cannula and the risk of air emboli. On the other hand, when the condition of the patient warrants it, this method of giving dextrose has important advantages. One of these is the continuous inflow of dextrose without undue strain on the organs of assimilation. Another advantage is the large amount of carbohydrate that can be administered in this fashion. According to Woodyatt, Sansum and Wilder,⁴¹ a theoretical maximum of about 1.5 Kg. of dextrose can thus be given to the average person in twenty-four hours. Actually, Hendon⁴² gave as much as 600 Gm. of dextrose in eighteen hours and as much as 500 Gm. daily for five successive days. This method of administration of dextrose, which answers the ideal requirements of therapy for cases of severe acute hepatic damage, such as acute yellow atrophy of

the liver, has not been given an adequate clinical trial. However, Hendon mentions two patients with multiple abscesses of the liver who recovered following its use. Before removal of the intravenous cannula it is important to decrease the amount of inflowing sugar solution gradually, because otherwise insulin shock may occur. The explanation of the hypoglycemia following abrupt cessation of prolonged sugar administration is that the pancreas, after becoming geared to a certain output of insulin, requires time in order to adjust its activity to changed conditions.⁴³

SUMMARY

1. The presence of a certain amount of glycogen in the liver is essential for the proper functioning of this organ.

2. In diseases of the liver, insufficient gluconeogenesis causes "internal" carbohydrate starvation, which results in a reduction of hepatic glycogen, probably largely through depletion of that part of it which serves as a storage form of carbohydrate.

3. Both in experimental animals with hepatic damage and in patients with diseases of the liver, it is possible by administration of suitable amounts of dextrose to relieve the internal shortage of carbohydrate and, as a result of this, to bring about glycogen storage.

4. Dextrose therapy is indicated in all cases of primary and secondary hepatic disease.

5. Oral administration of dextrose is the method of choice unless contraindications are present.

Parnassus and Third avenues.

Clinical Notes, Suggestions and New Instruments

NEPHROPEXY BY MEANS OF A FASCIAL HAMMOCK

DAVID R. MELEN, M.D., ROCHESTER, N. Y.

Nephroptosis is one of the commonest diseases of mankind or, perhaps it would be better to say, womankind. Keyes,¹ in his table of frequency, quoting various authors, gives it as between 4 and 56 per cent for all women, and as between 0.5 and 4 per cent for men. A fair average would be about 10 per cent for women and 1 per cent for men. The condition is much commoner in women who weigh under 120 pounds (55 Kg.) than in women who are in excess of that weight.

Of the women who have nephroptosis, only one in ten has symptoms referable to it. As has been pointed out many times, nephroptosis is not part of a general visceroptosis. Deming² and Kelly³ discuss and emphasize this point. Symptoms are classified under, first, nonsymptomatic nephroptosis; second, symptoms referable to the kidney region, such as discomfort, pressure or pain, in constant or recurrent attacks, and, third, gastric or neurasthenic symptoms.

It is not necessary or desirable to operate in all cases of nephroptosis. Operation should be limited to those cases in which there has been sufficient previous suffering to warrant it. This means that the diagnosis must be correct and that all other means of restoring the kidney to its proper site have been tried. This includes rest in bed, a weight-gaining regimen, fitted corsets or supports, and exercises designed to strengthen the abdominal muscles. A great deal devolves on the urologist as to the proper choice of patients who are suited for, or absolutely require, nephropexy.

43. Shaffer, P. A.: Personal communication to the author.

1. Keyes, E. L.: *Urology Textbook*, New York, D. Appleton & Co., 1923, p. 405.

2. Deming, C. L.: *Nephroptosis: Causes, Relation to Other Viscera, and Correction by a New Method*, J. A. M. A. 95: 251 (July 26) 1930.

3. Kelly, H. A., and Burnam, C. F.: *Diseases of Kidneys, Ureter and Bladder*, New York, D. Appleton & Co. 1: 459, 1915.

40. Simici, D.; Popescu, M., and Craifaleanu, A.: L'action du glucose commercial, administré comparativement par les voies digestive et intraveineuse, sur la teneur en glycogène du foie, du cœur et des muscles, *Compt. rend. Soc. de biol.* 106: 112 (Jan. 23) 1931.

41. Woodyatt, R. T.; Sansum, W. D., and Wilder, R. M.: Prolonged and Accurately Timed Intravenous Injections of Sugar, J. A. M. A. 69: 2067 (Dec. 11) 1915.

42. Hendon, G. A.: Experiences with Venoclysis, *Ann. Surg.* 91: 753. (May) 1930.

One who reviews the literature of the surgical methods used to anchor a loose kidney since Hahn⁴ did the first one in 1881 will be amazed at the infinite variety and the ingenuity exhibited. Just to mention a few, cited by Deming,² Davis⁵ tunneled underneath the kidney capsule with a bundle of quadratus muscle. Morris⁶ turned back a wide flap of kidney capsule and sutured it to the upper angle of the wound. Ledón

ureterolysis. He excises the fat and does not use it in his technic of nephropexy but incises the true capsule at the upper pole and then at the lower pole, stripping up the capsule to about the middle of the kidney. Here the capsule is sewed together into a band about 2 inches wide, and the kidney is suspended by suturing this band to the intercostal muscles between the eleventh and twelfth ribs. Foley¹² uses suspension sutures passed through the true capsule only, and not through kidney substance. The perirenal fat is not sutured for support.

Carl Beck¹³ perforated the kidney near its lower pole by a large trocar. The margin of the spinalis dorsi muscle was incised, and a bunch of fibers, just large enough to pass through the renal buttonhole, mobilized. With forceps, this bandlike muscle flap was drawn through the renal hole made by the trocar. Then the end of the flap was fastened somewhat below its former muscular bed by sutures.

Deming's² technic consists of stripping off all the perirenal fat and separating all adhesions that may be holding the kidney and ureter. The kidney is pushed up into the chest as far as

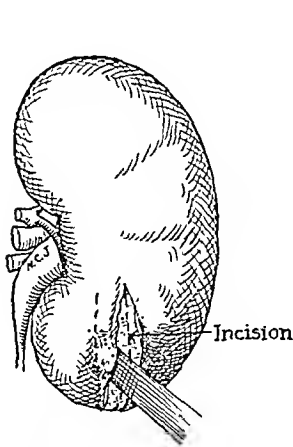


Fig. 1.—Elevating the edge of the capsular incision.

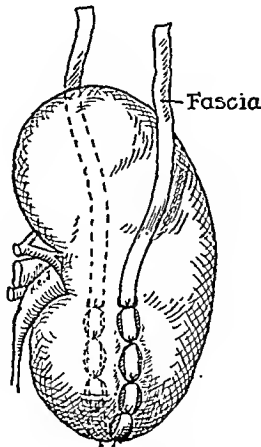


Fig. 2.—Fascia lata sutured into position.

Uribe⁷ freed the last rib, and, after tunneling through under the capsule, suspended the kidney on the rib. Bell⁸ urged the use of a tongue-like piece of renal fascia passed through the arcuate ligament and fastened with two silk sutures. Penick⁹ used a strip of lumbar fascia by passing it around the lower pole, elongating it with chromic sutures, and fastening it upward to the diaphragm. Chambers¹⁰ stripped back part of the true capsule at the upper pole and approximated this exposed surface against the muscles. He passed several strands of catgut around the kidney to hold this approximation snug, his idea being that the adhesions forming would anchor the kidney.

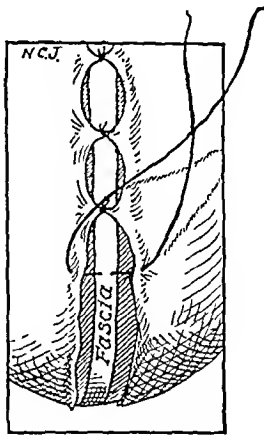


Fig. 3.—Detail of method of suturing the capsular edges and the fascia together.

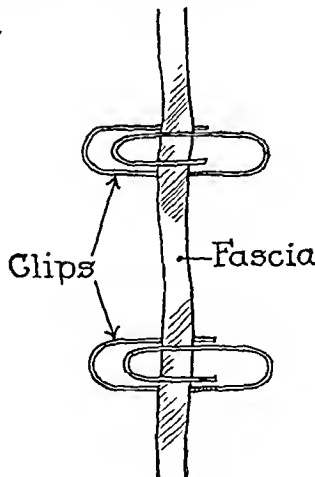


Fig. 4.—Paper clips in use to keep fascia from wrinkling.

O'Connor¹¹ stresses freeing the kidney and ureter of the surrounding fat and adhesions. He calls this nephrolysis and

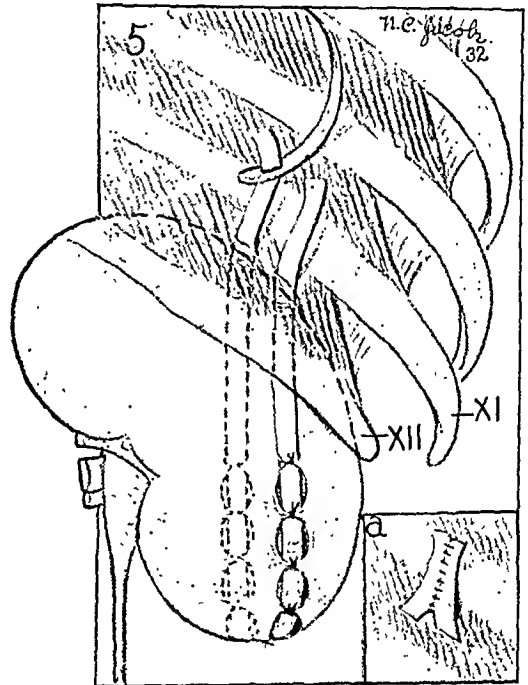


Fig. 5.—Free edges of fascia brought through intercostal muscles between twelfth and eleventh ribs. Inset (a), free ends of fascia sutured together with heavy silk.

possible, and the perirenal fat is then sutured to the quadratus lumborum muscle, thereby obliterating the space below the kidney. No sutures are passed through the true capsule or through the kidney substance.

Kelly's¹² method, which is perhaps the most popular of all, consists of passing chromic gut sutures through the true capsule to include a small bite of parenchyma. The free ends of the sutures are then passed through the quadratus lumborum muscle.

Davis⁵ states that any one of the flap methods in which flaps have been fashioned from the true capsule and sewed to the musculature is apt to result in failure, as the flap tissue becomes stretched as time goes on, and the kidney again becomes low. I am therefore presenting a method of nephropexy which is easy and positive. The technic is obvious from a study of the accompanying illustrations and the description in the report of the case. The prepared fascia lata is now being put up in glass tubes by catgut manufacturers.

12. Foley, F. E. B.: Improved Methods for Nephropexy, and for Exposure of the Kidney, *Arch. Surg.* 18:1413 (April) 1929.

13. Beck, Carl: On a New Principle in Nephropexy, *New York, M. J.*, Dec. 7, 1901.

4. Hahn, Eugen.: Nephropexy, *Centralbl. f. Chir.* 8:449-452, 1881.
5. Davis, B. B.: A New Method of Anchoring the Kidney, *J. A. M. A.* 38:1208 (May 10) 1902.
6. Morris, R. T.: A Method of Fixation for Loose Kidney, *M. Rec.*, Feb. 23, 1921.
7. Uribe, Ledón: Nuevo procedimiento para la fijación del riñon, *Rev. de med. y cir. de la Habana* 27:331-335, 1922.
8. Bell, J. J.: Nephropexy: Its Causation, Symptoms and Radical Cure, *Brit. M. J.* 1:889-892 (May 26) 1923.
9. Penick, R. M.: New Technic for Suspension of the Kidney, *New Orleans M. & S. J.* 71:444 (April) 1919.
10. Chambers, P. F.: A New Method of Nephrorrhaphy, *Am. J. Obst.* 44:256, 1901.
11. O'Connor, V. I.: Nephrolysis, Ureterolysis and Nephropexy, *Arch. Surg.* 18:1263-1272 (April) 1929.

REPORT OF CASE

Mrs. A. N., aged 32, a housewife, referred by Dr. Carl Ottley of Charlotte, N. Y., had had almost constant pain in the right kidney region, anteriorly and posteriorly, for a period of twelve years. Many times the pain became so severe that she had to go to bed. The pain usually began in the back and radiated to the right flank and to the right lower quadrant, anteriorly, as far as the bladder. When the attacks of pain were more severe than usual, there would be considerable belching of gas, and occasional nausea and vomiting.

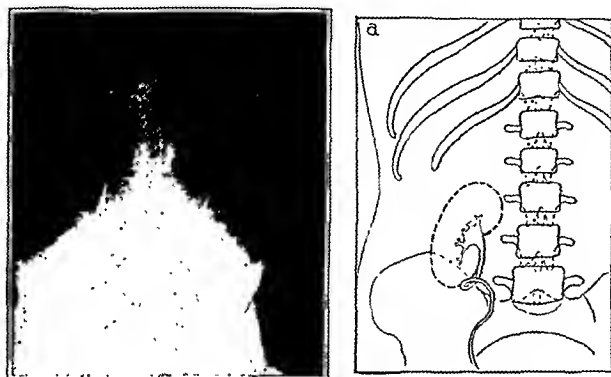


Fig. 6.—Pyelogram, in standing position, before operation, showing kidney low, and ureter so redundant that it loops on itself. a, diagrammatic tracing of pyelogram.

On physical examination the right kidney was easily palpable and freely movable. Complete laboratory studies were all normal with the exception of a few pus cells in the urine, on repeated examination.

Cystoscopy and pyelography in the standing position showed the right kidney markedly ptosed, the lower pole being below the shadow of the crest of the ilium, and the ureter so redundant that there was loop formation.

Operation was done under spinal anesthesia. A right lumbar incision was made 6 inches long from the costovertebral angle 1 inch below the last rib and parallel to it. The kidney was normal in size, shape and consistency. It was very loose and

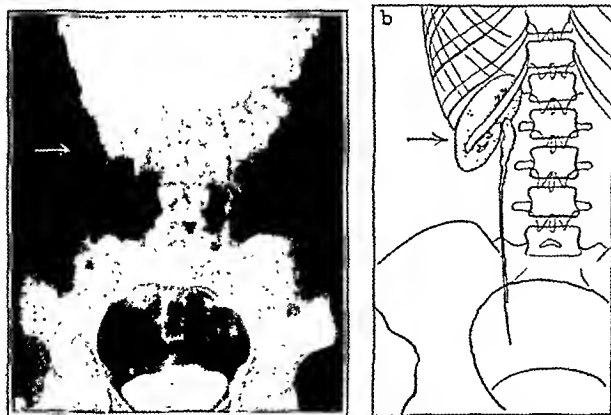


Fig. 7.—Pyelogram, in standing position, six months after operation, showing kidney anchored high. b, diagrammatic tracing of pyelogram.

freely movable. It was found rotated on its long axis 180 degrees. The fatty capsule was stripped thoroughly from the kidney and renal pelvis, beginning at the upper pole, and the mass of fat was kept intact purposely (not fragmented). The ureter was isolated and freed for 8 inches, down to its entrance into the bony pelvis, as suggested by O'Connor.¹¹

No stones were palpated; there were no aberrant vessels or adhesions.

The true capsule at the lower pole only was split in the sagittal plane, care being taken not to cut into the parenchyma. The edges of this incision were carefully raised from the

parenchyma, and a piece of "prepared fascia lata," three-eighths inch wide by 9 inches long, was inserted between the lips of this capsular incision, and the fascia sewed into position with number 1 chromic gut in a nontraumatic needle.

The kidney was then pushed up under the diaphragm, obliquely, so that the upper pole pointed medially toward the spinal column. This was done to give better drainage to the inferior calix. The two free ends of the fascia were then threaded on Gallie needles and passed through the intercostal muscle, between the twelfth and eleventh ribs, and sutured together with heavy silk.

The fatty capsule, which had been kept intact purposely when it was stripped from the kidney, was sewed across to the quadratus lumborum muscle, after the method of Deming.² A small rubber tube one-eighth inch wide was inserted down to this fatty layer for drainage. Closure of the wound was done in layers.

The patient made a rapid and uneventful recovery; the wound healed by primary intention. She was out of bed on the sixteenth day and discharged on the nineteenth day. During the nine months that has elapsed since the operation she has had none of her previous attacks of pain or nausea.

A pyelogram six months after operation, taken in the standing position, shows the kidney anchored high.

35 Chestnut Street.

A FOREIGN BODY IN THE VAGINA OF A FOUR YEAR OLD CHILD, WITH RESULTANT MASSIVE HEMORRHAGE

SATER NIXON, M.D., INDIANAPOLIS

The presence of a foreign body in the vagina of a child, aged 4 years, with a practically imperforate hymen, is in itself a rare occurrence, and the resulting massive hemorrhage creates additional interest.

A search of indexed literature, terminating with the third quarter of the *Quarterly Cumulative Index Medicus* for 1932, revealed that only a few cases, occurring from infancy to the age of 11 years, have been reported in this and foreign countries. Seven of these were cited by Offergold in his report in 1930. Of the twenty-two reports published, only eight cases occurred in children of 5 years or younger, and in one case the age was not mentioned.

R. R., a girl, aged 4 years and 9 months, was referred for surgical attention, July 8, 1932, because of a recent massive vaginal hemorrhage, preceded by vaginal discharge and slight hemorrhages; nervousness, manifested by irritability and restlessness, and loss in weight. The family history was obscure, since the early months of the patient's life had been spent in a large Eastern orphanage. The child, whose birth was at full term, had received meticulous care in the home of foster parents since the age of 1 year. She had been unusually well: the only illness had been whooping cough at 2 years of age, with good recovery. She appeared to be perfectly normal, except for the fact that since being in the present home she had persistently slept in the "knee-chest" position.

The complaint antedated April, 1932, when the mother noticed staining of the child's undergarments, apparently by purulent material from the vagina. A pediatrician advised the application of antiseptic solutions to the external genitalia and abstinence from play in a sand pile, which he felt might be the source of the difficulty. The offensive discharge continued in increasing amounts, with at times slight hemorrhages; the child began to lose weight appreciably. One week before examination she suffered rather a copious vaginal hemorrhage, which lasted only a few minutes, with recurrence six days later (July 7). At that time the hemorrhage was severe, saturating her clothing, bed linens and mattress.

On examination the child appeared somewhat anemic but of normal age-developmental ratio, and the skin was free of lesions. There were apparently neither congenital nor acquired deformities of the bony or soft tissue structures of the body. The hair of the head was abundant and of normal silky texture. The pulse, temperature and blood pressure were normal. The results of the general examination, in which special attention

was directed to the development of the mammae, adenopathy, discernible tumors of the abdomen, and enlargement of the liver and spleen, were essentially negative. Local pelvic examination showed neither abnormal nor premature development of the external genitalia. The vulva and adjacent cutaneous tissues were apparently free of acute or chronic inflammation but were bathed in a bright red, foul smelling discharge. The hymen was imperforate except for a minute opening of about 2 mm. near the upper segment, through which the sanguino-

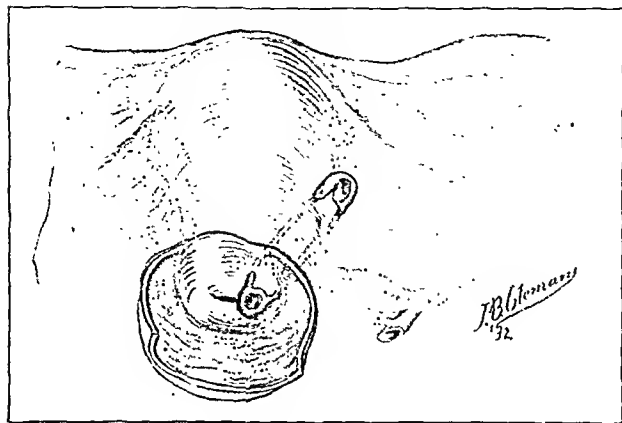


Fig. 1.—Location of safety pin.

purulent material egurgitated. Rectal examination revealed no abnormalities excepting hypersensitivity of the anterior rectal wall. A bimanual recto-abdominal examination was unsatisfactory because of the irritability of the child.

The blood counts were within normal limits; the red cells were uniform in size, shape and staining properties, with a normal coagulation and bleeding time; hemoglobin was 70 per cent. A negative blood Wassermann test, taken prior to adoption, was reported by the foster parent. The bacteriologic examination of the discharge showed nothing more than the usual pus-producing organisms and a few suggestive gram-negative diplococci, but the bacteriologist would not make a positive or a negative diagnosis of gonorrheal vaginitis without further study. The urinalysis of a noncatheterized specimen was negative except for the expected leukocytes, erythrocytes and squamous epithelial cells. Catheterization and collection of blood for another Wassermann test were deferred to a more propitious time.

In a summary of the results, neoplasms of the genital tract appeared to be the most probable causative factors. In the differential diagnosis, ovarian tumors, either benign or malignant, were tentatively eliminated, since in children they are commonly associated with somatic and menstrual precocity and with an easily palpable abdominal tumor. Benign tumors of the infant uterus rarely if ever occur; therefore this possibility evoked no interest. An occasional cause of vaginal hemorrhage and foul smelling discharge in children is the benign, sloughing vaginal tumor—the vaginal polyp. However, Abt writes: "Almost all tumors of the uterus and vagina in children are malignant and since these tumors of the pelvic organs develop with extreme rapidity in infancy and childhood although the general health may not be noticeably influenced until the disease is well advanced, with hemorrhage the only symptom, the subject is of grave importance." Therefore a "working diagnosis," thought adequate to account for all the symptoms, was malignant or benign tumor of the vagina, or a malignant condition of the uterus.

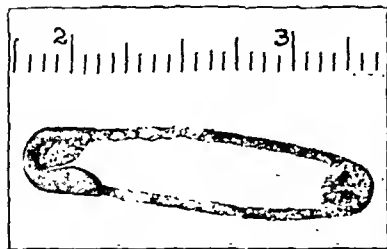


Fig. 2.—Appearance of safety pin after removal.

Under gas anesthesia at St. Vincent's Hospital, July 9, the hymen was ruptured and the vagina dilated. During the course of this diagnostic procedure, a closed, greatly encrusted safety pin, measuring 4.8 cm. by 1.1 cm., was found to have penetrated the tissues of the anterolateral portion of the cervix near the fornix of the left side. The object pointed upward, forward and outward, two thirds of it being buried in the vaginal and interstitial portion of the cervix and the parametrial tissues in the base and lower part of the broad ligament. Necrosis of the surrounding tissues, including probably branches of the uterine artery, was the result. The pin was removed and the child made an uneventful recovery, leaving the hospital on the third day.

List of Collected Cases

Cases Cited by H. Offergold			
Author	Journal	Age of Child	Object
Offergold, H....	Monatschr. f. Kinderh. 44: 29, 1930	2 yrs. 9 mo.	Metal container, containing crystals of potassium permanganate
Horn.....	Zentralbl. f. Gynäk. 52: 700, 1928	5 yrs.	Empty shell, 3 cm. by 8 mm.
Holme	Zentralbl. f. Gynäk. 1928	4½ yrs.	Hairpin introduced 1 year before
Gronarz.....	Deutsche med. Wehnschr. 36: 2025, 1910	3 yrs.	Stick introduced by attacker
Fabre.....	Gaz. méd. de Paris 148, 1897	4 yrs.	Hairpin 6 cm. long
Dietrich.....	Zentralbl. f. Gynäk. 52: 700, 1928	6 yrs.	Ear of grain, discharge for 1 year
Natanson, K....	Wien. klin. Wehnschr. 21: 635, 1908	8 yrs.	Button
Additional Cases			
Morestin, H....	Bull. et mém. Soc. anat. de Paris 74: 885, 1899	3 yrs.	Pin 5 cm. long with a head the size of a pea
Stoeber, T....	Monatschr. f. Kinderh. 1926	2½ yrs.	Two cherry stones, two pebbles, two splinters of wood and other foreign bodies, including a number of scraps of coal
Rajagopalan, R. K.	Indian M. Gaz. 201, 1928	9 mos.	Paddy grain
Welt-Kakels, Sara	Arch. Pediat. 18: 933, 1901	Not given	Safety pin
Gilde-Ostachoviene	Medicine, Kaunas 8: 116, 1932	7 yrs.	Unable to learn the object found
Pilot, I....	Am. J. Obst. & Gynec. 18: 824, 1929	9 yrs.	Hairpin
Rouvier, J. . .	Ann. de gynéc. 28: 283, 1887	7 yrs.	Shell of hazelnut
Mareus, E.....	Wien. klin. Wehnschr. 25: 544, 1912	6 yrs.	Hairpin
Ebeler.....	München. med. Wehnschr. 64: 1244, 1917	11 yrs.	Cork
Moore, A.....	Memphis M. Month. 24: 251, 1904	6 yrs.	Wad of brown paper
Le Clere.....	Bull. et mém. Soc. nat. de chir. 24: 15, 1925	6½ yrs.	Foreign body composed entirely of calcium oxalate, 6 cm. long and weighing 25 Gm.
Rosmarin, H....	Dermat. Wehnschr. 91: 953, 1930	6 yrs.	Forked branch of cherry
Lorini, A.....	Arte ostet. 19: 205, 1905	8 yrs.	Piece of straw rolled up
Krause, P.....	Berl. klin. Wehnschr. 33: 839, 1896	6 yrs.	Hairpin in vagina for two years
Chauvin and Garriques	Montpellier méd. 211, 1919-1920	8 yrs.	Leech

An interesting notation was made in the follow-up record, October 15, to the effect that the normal prone position during sleep was adopted a few days subsequent to removal of the foreign body. Therefore, it is perfectly logical to assume that the mechanical presence of the object in the vagina was responsible for the "knee-chest" position and would suggest the importance of direct interrogation regarding this point in eliciting the history in cases presenting similar symptoms.

Presumably this foreign body had entered the vagina during the time spent in the institution, almost four years before, because of the length of time of the peculiar position assumed during sleep, the pronounced encrustation of the object, the extreme degree of cicatricial encystment, and the contraction with practical closure of the introitus.

902 Medical Arts Building.

DERMATITIS DUE TO NUPERCALINE

RICHARD W. FOWLKES, M.D., RICHMOND, VA.

In a fairly extensive search of the literature I have not found any reference to a severe localized and mild generalized dermatitis due to local applications of nupercaline.

REPORT OF CASE

J. E. T., a man, aged 37, was first given a 1 per cent nupercaline ointment eighteen months before the present attack of dermatitis. At that time a few hemorrhoidal tags were removed by a proctologist, and the ointment was given to relieve pain



Toward the left is the reaction following a patch test with 1 per cent aqueous nupercaline solution. The other reaction is from 1 per cent nupercaline in hydrous wool fat.

and a mild pruritus with complete success and without causing any irritation. Six months ago the patient again noticed some pruritus and, without consulting the proctologist, used nupercaline ointment for relief. Within a few days the local inflammation had increased considerably, and burning and itching had developed in addition to the original pruritus. Of his own accord he discontinued the nupercaline ointment, substituting phenolated petrolatum. Within a week he was well.

The patient was seen by me, Dec. 24, 1932. Ten days prior to this he consulted his proctologist for a small lump in the intergluteal fold. This was diagnosed as a sebaceous cyst, which was excised, and the patient again used his nupercaline ointment to relieve some slight local pain. He gradually developed, within a week, a severe dermatitis, and when seen, December 24, the patient was suffering intensely. He presented a severe vesicular and bullous eruption in the intergluteal fold which extended well outward on the buttocks. The perineum, scrotum and penis were extremely erythematous and swollen, with the erythema extending down the inner side of both thighs. Accompanying this eruption was an intensely painful burning, stinging and itching, also there was a severe generalized pruritus over the entire body, with a papular and macular rash on the arms and trunk.

The patient was put to bed and continuous wet dressings of saturated boric acid solution were applied. Sedatives were required, as he had had no sleep for several nights. The patient was forced to remain in bed a few days but recovered almost entirely within a week both from the local dermatitis and from the generalized eruption and pruritus.

A contact test, in which the original nupercaline ointment was used, was applied to the patient's forearm, and after twelve hours this was removed because of stinging and itching. The area was erythematous and presented one or two small vesicles. Since the ointment was made by a local druggist, and a hydrous wool fat base was used, a contact test was made on the other forearm, pure hydrous wool fat being used. Also, another patch test was applied, a fresh 1 per cent aqueous solution of nupercaline being used. The hydrous wool fat test was negative after twenty-four hours and remained so, but the aqueous

nupercaline test had to be removed after ten hours on account of the local reaction. The area was erythematous and slightly swollen, and when seen the following day it was vesicular in character, simulating completely the local eruption about the buttocks.

Passive transfer tests were made, but they were negative. This, however, was expected, since Coca¹ has shown that in contact dermatitis the human skin cannot be passively sensitized with the serum of a sensitive person.

404 Professional Building.

ARGENTAFFIN TUMOR (CARCINOID) OF THE RECTAL COLON

ALEXANDER BRUNSCHWIG, M.D., CHICAGO

Carcinoid tumors of the appendix and small intestine have been repeatedly described in the literature.¹ It is generally conceded that these neoplasms arise from the so-called argentaffin cells present in the mucosa.² Argentaffin cells are also normally present in the stomach and colon.³ As the name implies, these cells, and the carcinoids derived from them, contain cytoplasmic granules capable of reducing ammoniacal silver solutions. This is the cardinal differentiation between true carcinomas and carcinoid tumors.

A review of the literature failed to disclose reports of carcinoid tumors in the stomach. Two cases of carcinoid tumor



Fig. 1.—Section of argentaffin tumor of rectal colon. Small groups of tumor cells in dense stroma. Hematoxylin-eosin stain. Reduced from a photomicrograph with a magnification of 200 diameters.

of the colon were reported by Saltikow:⁴ one in the sigmoid and one in the anterior wall of the rectal colon. These were

1. Coca, A. F.; Walker, Matthew, and Thommen, Augusta: *Asthma and Hay Fever in Theory and Practice*, Springfield, Ill., Charles C. Thomas, 1931.

From the Department of Surgery, University of Chicago.

1. Oberndorfer, in Lubarsch and Henke's *Handbuch*, 4, part 3, pp. 814 and 840. Forbus, W. D.: *Argentaffin Tumors of the Appendix and Small Intestine*, Bull. Johns Hopkins Hosp. 37: 130 (Aug.) 1925.

2. Masson: *Appendicite remogène et carcinoides*, Ann. d'anat. path. 1: 1, 1924.

3. Pessin, S. B.: *The Enterochromo-Argentaffin Cells*, Arch. Path. 11: 171 (Feb.) 1931.

4. Saltikow: *Ueber die Genese der Karzinoiden Tumoren u. s. w.*, Beitr. z. path. Anat. u. z. allg. Path. 54: 559, 1912.

reported before the argentaffin nature of carcinoid tumor cells was recognized (Gosset and Masson²); and although Saltikow's illustrations strongly suggest the carcinoid nature of the neoplasms, their final classification as such cannot be made in the absence of silver impregnation to demonstrate the argentaffin cytoplasmic granules.

The following reported case is an instance of true argentaffin tumor in the (rectal) colon:

A man, aged 63, was admitted to the University of Chicago Clinics for general physical examination, which proved to be negative except for a small, hard, rounded, movable nodule 0.5 cm. in diameter beneath the mucosa of the anterior wall of the rectum approximately 8 cm. above the mucocutaneous junction. At proctoscopic examination the mucosa appeared normal over it. Under local anesthesia the tumor and overlying mucosa were removed. It did not shell out but was dissected from the adjacent submucosa, to which it was only loosely adherent.

After formaldehyde fixation, the tissue was embedded in paraffin, sectioned, and stained by Harris's hematoxylin and

argentaffin cell (cell of Kultschitzky) was also seen among the mucous cells of the colon mucosa.

The diagnosis was argentaffin or carcinoid tumor of the rectal colon.

COMMENT

Oberndorfer,⁵ the first to separate carcinoid tumors of the small intestine from true carcinoma, believed that they were invariably benign. Subsequent study, however, has shown that they may become malignant, as evidenced by regional and distant metastases. For example, of 104 instances of carcinoid tumor of the small bowel reviewed by Cooke,⁶ 21 were malignant. Cases of malignant argentaffin tumors of the appendix have been collected from the literature by Lubarsch and Hanke.

Argentaffin tumors of the colon are no doubt much more common than the literature indicates. They must be considered in the differential diagnosis of epithelial tumors of the colon.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.
PAUL NICHOLAS LEECH, Secretary.

LUMODRIN NOT ACCEPTABLE FOR N. N. R.

Lumodrin is a preparation in tablet form manufactured by the Winthrop Chemical Co., Inc., and proposed for the treatment of cough. It is said to contain in each tablet Ephedrine Hydrochloride $\frac{3}{8}$ gr., Luminal $\frac{1}{4}$ gr., and Pyramidon 2 gr.; recommended in a dosage of 1 or 2 tablets three or four times a day for adults, and for children above five years, $\frac{1}{2}$ to 1 tablet. In an advertising circular (which also contains reference to Oscodal and Pyramidon—thus lending the prestige of accepted products to the promotion of an unaccepted one) the following claims are made:

"Each of the constituents of Lumodrin contributes to its beneficial action in diseases of the respiratory tract: Luminal, by allaying irritation of the mucous membrane; ephedrine, by relaxing spasmodic contraction of the musculature; Pyramidon, by exerting an antispasmodic and analgesic effect and also by reducing fever in acute cases.

"Because of its combined actions in reducing congestion, allaying irritations and controlling bronchial spasm, Lumodrin relieves cough, oppressed breathing, chest pains and general discomfort. Its administration is also followed by a mild reduction of the temperature in febrile cases of colds and influenza."

In another circular it is claimed that:

"In acute bronchitis, Lumodrin reduces the congestion of the mucous membrane . . ."

" . . . ephedrine promptly abolishes the difficulty in breathing [in asthma]. When supplemented by Luminal, as in Lumodrin, the relief of bronchospasm is materially prolonged, while nervous disturbances accompanying the asthmatic paroxysms rapidly subside. The results obtained with Lumodrin in hay fever associated with bronchial spasm have also been satisfactory." "In pertussis Lumodrin will be found a serviceable preparation. Good results are to be expected particularly in the milder forms [sic!] and in the second stage." "Lumodrin also exerts a beneficial action in acute and chronic laryngitis by reducing congestion, allaying irritation and eliminating the spasmodic element."

The name "Lumodrin" conveys no information as to the active components of the preparation; although these are stated on the reproduction of the label printed in one circular, and constitute two Council-accepted products (Luminal and Pyramidon) and one unaccepted product (ephedrine hydrochloride—Winthrop). As is the case with the similar mixtures, "Allonal" (J. A. M. A. 86:1853 [June 12] 1926), and "Peralga" (J. A. M. A. 80:942 [March 31] 1923), Lumodrin conflicts with the Council's requirement that pharmaceutical preparations and mixtures "be so named as to remind the prescriber constantly of their potent ingredients."

The rationale of the combination of these three ingredients in a cough mixture is not apparent. In the case of another cough mixture containing ephedrine (Ephedrol), the Council



Fig. 2.—Group of argentaffin tumor cells, showing dense collection of argentaffin granules (black staining) in some of the cells. Reduced from a photomicrograph with a magnification of 3,000 diameters.

eosin. Other sections were impregnated in Fontana's silver nitrate solution and treated according to the technic described by Masson to demonstrate argentaffin granules and counterstained with ponceau-red-acid fuchsin-aniline blue. (The staining was done by Dr. P. A. Delaney.)

The hematoxylin-eosin sections showed a segment of normal colon mucosa overlying rather dense fibrous tissue, throughout which were scattered small, irregular groups and nests of closely packed rounded or polyhedral tumor cells containing oval nuclei with finely stippled chromatin and one or more nucleoli. The cytoplasm of these cells was granular and eosinophilic. Within some of the larger cell masses there was a suggestion of alveolar formation. The septums between the groups of neoplastic cells contained smooth muscle fibers derived from the muscularis mucosae, as well as fibrous tissue. Within these septums were also tumor cells occurring singly or in groups of from two to five cells.

Sections after silver impregnation showed the cytoplasm of many of the tumor cells crowded with black or dark black-brown staining granules (reduced silver). An occasional normal

5. Oberndorfer: Karzenoide Tumoren des Dünndarms, Frankfurt. Ztsch. f. Path. 1: 426, 1907.

6. Cooke, H. H.: Carcinoid Tumors of the Small Intestines, Arch. Surg. 22: 568 (April) 1931.

held that there was no satisfactory evidence for its inclusion in preparations of this type (J. A. M. A. 94:634 [March 1] 1930), and that its use therein was based seemingly on an attempt to take commercial advantage of the recent popularization of ephedrine. Lumodrin appears to be a case in point. The Council has also held that, as "barbital is excreted (or eliminated) more slowly than amidopyrine and it is necessary to give too much of the hypnotic in order to give enough of the amidopyrine when a mixture of these two is administered more than once to a patient," the repeated administration of a barbiturate and amidopyrine in fixed proportion is therefore irrational.

According to the recommended dosage, a patient might receive in one day: 3 grains of ephedrine hydrochloride, 2 grains of phenobarbital and 16 grains of amidopyrine. A child might receive up to one-half this dosage. Where this is repeated for several days, as well it might be in whooping cough, for instance, untoward effects might occur frequently, owing to excessive dosage of one or all of these substances.

With regard to the claims made for Lumodrin, so far as the Council knows, no evidence exists: that Luminal allays irritation of mucous membranes; that spasmodic contraction of the bronchiolar musculature (requiring ephedrine or similar preparations for relief) occurs in cough other than in asthma and possibly in pertussis; that amidopyrine is an "antispasmodic"; or that any of the components of Lumodrin, separately or together, would relieve the congestion of the bronchial mucous membrane in bronchitis.

In view of these considerations, and as the Council had already taken a definite stand with regard to similar preparations (Ephedrol, Allonal, Peralga) the Council decided that Lumodrin is not acceptable for inclusion in New and Non-official Remedies because it is an unscientific mixture containing an excessive number of active ingredients (rule 10); and because it is marketed with unwarranted and extravagant therapeutic claims (rule 6), under an uninforming and misleading name (rule 8).

OMNADIN NOT ACCEPTABLE FOR N. N. R.

Omnadin (Prolipin) is a preparation manufactured by H. A. Metz Laboratories, Inc., recommended for use as nonspecific lipoprotein therapy practically as a cure-all.

In an advertising circular it is stated to be "... a sterile solution, composed of protein substances obtained from non-pathogenic bacteria (*sarcina* and *B. mycoides*), various animal fats and lipoids derived from bile." In another circular it is said to be "... a combination of proteins and lipoids originated by Professor Much." No more specific statement of composition could be found in the advertising literature.

Omnadin is stated by Freedman¹ to be a "... compound sarcine vaccine composed of various neutral animal fats and bile lipoids, as well as reactive substances derived from metabolic products of nonpathogenic schizomycetes. . . . It . . . combines the basal elements of all those antigens which play an immunizing part in infectious processes."

Schnapek² states that Omnadin is a mixture of metabolic products from nonpathogenic fungi, lipoids from bile, and neutral animal fats. The latter is essentially the description given in Gehe's Codex.

It is apparent that Omnadin is a semisecret preparation marketed under an uninformative name. The following are some of the claims made for this product:

"Omnadin exerts a prompt and favorable reaction upon the entire system . . . Its administration in acute infections is followed by a typical rapid fall in temperature . . . The disease is often aborted . . . complications are frequently prevented. . . . A definite advantage of Omnadin is its freedom from anaphylactic or other unpleasant by-effects. . . . It can be repeatedly given without risk of injurious effects."

"The reaction brought about by Omnadin is in marked contrast to the violent symptoms which characterize 'protein shock'. This is by no means to be regarded as a sign of inefficiency; on the contrary, it represents a distinct advantage over the older method. The action of Omnadin is exerted directly against the cause of the pathologic process . . . As the natural course of the disease is not masked by 'shock' symptoms, the true response of the body to non-specific therapy can be determined more accurately. . . ."

"The chief conditions in which Omnadin has proved of value comprise influenza, pneumonia, erysipelas, scarlatina, measles, pertussis, typhoid fever, puerperal sepsis, surgical sepsis, arthritis, gonorrhea, eye infections, tonsillitis and otitis . . . colds . . . gastric and duodenal ulcer . . . [This list comprises only a portion of all the conditions for which it is recommended.] It can also be used advantageously for activating specific vaccine therapy" (italics ours). . . . It is extremely well borne by adults, children and even infants."

"Omnadin is administered intramuscularly as early as possible. The average single dose for children is 1 to 2 cc., and for adults 2 cc. One injection daily is usually sufficient but it may be repeated, if necessary, without intolerance or local irritation."

It is claimed in the advertising circulars that this preparation was originated by Much on the basis of his work on lipoprotein immunity. Much's original work has been confirmed and extended by others,³ and it now seems fairly well established that the admixture of protein in lipoids will, in certain cases in animals, incite the production of antibodies to certain lipoids. According to Wells,⁴ the lipoids are not of themselves antigenic but they modify the specificity of the antigens to which they are united. Much⁵ has claimed that a mixture of protein, lipid and neutral fat produces more antibodies than any one of these individually, or all separately, and that the immune reaction so produced resembles the natural defense mechanism of the body. This thesis has not been accorded general acceptance by other workers in this field. Certainly the applicability of this principle to the treatment of specific disease processes in the human being has not been established.

The Council's referee has reviewed the fairly extensive clinical literature on Omnadin of the past several years, practically all of which emanates from foreign sources. Without exception, the reports are uncritical and the observations uncontrolled.

The composition of Omnadin, as it is stated, is obviously highly arbitrary. Apparently the "protein" is derived from several different micro-organisms; the rationale of the choice of the particular varieties indicated is certainly not apparent; nor is evidence furnished that the "metabolic products" of the micro-organisms are really proteins. Just what lipoids are extracted from bile for this mixture cannot be ascertained from the literature, and the composition of the neutral fat mixture is equally shrouded in uncertainty. Needless to say, the product, as claimed, is an unnecessarily complex mixture.

If the complete absence of allergic reactions claimed for this preparation in both advertising material and literature is true, it would appear that Omnadin contains little, if any, antigenic material. With those preparations of definite high antigenic potency (*Bacillus typhosus* vaccine, for instance), reactions are known to occur in a certain percentage of, if not in all, individuals treated. If Omnadin is as safe as it is claimed to be, either it represents an epoch-making advance in medicine, or it is practically useless as an immunizing agent.

There is no reliable evidence that Omnadin involves any advance in nonspecific immune therapy. The Council believes that it must be classed as a dangerous preparation: If it contains antigenic material, claims of complete safety in its therapeutic use must be considered reprehensible; even if it has only a trace of antigen, it may yet cause allergic reactions; and if it is devoid of antigenic potency, its use is unwarranted and may carry a hazard in the neglect of more effective remedies.

In the past months the Metz Laboratories have carried on an active advertising campaign for Omnadin among physicians in this country. It does no credit to this firm that it should so assiduously promote a preparation in which the shotgun tactics of irrational therapeutics are clothed with a similitude of modern science; not to mention the utter disregard for the public welfare involved in the extravagant claims and the other features which constitute infraction of the Council's rules.

The Council declared Omnadin (Prolipin) unacceptable for inclusion in N. N. R. because it is an unscientific preparation of semisecret composition (rules 1, 2 and 10), marketed with unwarranted and extravagant therapeutic claims (rule 6) under an uninformative name (rule 8).

3. Landsteiner and Simms; Sachs and Klopstock; cited from H. Gideon Wells in Jordan and Falk: *Newer Knowledge of Bacteriology and Immunology*, Chicago, 1928, chapter 50, *Organ-Specific Lipoids*, editorial, J. A. M. A. 97:1628 (Nov. 28) 1931.

4. Wells, H. G.: *Newer Knowledge of Bacteriology and Immunology*, Chicago, 1928, chapter 50.

5. Much, H.: *München. med. Wchnschr.* 72:2089 (Dec. 4) 1925.

1. Freedman, T.: *S. African M. J.* 6:301 (May 14) 1932.

2. Schnapek, F.: *Wien. klin. Wchnschr.* 43:430 (April 3) 1930.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary.

BOVRIL

Extract of Meat and Plant

Manufacturer.—Bovril, Ltd., London, England.

Distributor.—Bovril of America, Inc., Camden, N. J.

Description.—A viscous mixture of beef extract, hydrolyzed beef protein, yeast extract, beef powder, salt, extracts of cayenne, white peppers and celery seed, and caramel.

Manufacture.—Beef extract ingredient: Fresh beef muscle and trimmings from healthy cattle passed by government inspectors in the company's plants in Argentina are extracted with hot water; the extract solution is concentrated in "vacuum" and further concentrated to desired consistency at normal pressure. Analytic control is exercised throughout all stages of the manufacture. The extract is packed in tin plate containers and shipped to London, England.

Beef powder ingredient: Fresh beef muscle is trimmed of fat, minced by machine, and slowly dried in shallow steam heated evaporating pans equipped with rotating stirrers and maintained at a low temperature. The resulting coarse powder containing less than 5 per cent moisture and fat is immediately packed in hermetically sealed tins for shipment to London, where it is ground in granite roller mills to pass through fine mesh sieves.

Hydrolyzed beef protein ingredient: Residual meat after extraction in the preparation of the beef extract is rapidly dried in rotary driers and packed in hermetically sealed tins for shipment to London, where the dried beef meal is digested in glass lined pans with a dilute solution of hydrochloric acid for a definite time; it is neutralized with sodium carbonate, filtered and used without further treatment. All operations are under strict laboratory control.

Plant extract ingredient: Fresh brewers' yeast is autolyzed by its natural enzymes acting at a low temperature; the nitrogenous bodies thereby are rendered soluble. The autolyzed material is extracted with hot water; the solution is filtered and concentrated in "vacuum." The operations are carried out under conditions protective of the vitamins B and G content.

The previously indicated ingredients are heated to below 75 C. and mixed in definite proportions in steam heated pans. The hot fluid is sieved through wire cloth of fine mesh and automatically packed into clean new bottles. The product keeps in good condition almost indefinitely.

The company's factory at Santa Elena, Entre Rios, Argentine Republic, where the beef extract powder and meal are prepared, is an excellently equipped and hygienic food factory. Strict control is exercised over every stage of manufacture. All cattle are individually examined by a government inspector before being passed for the factory. The final processes of the manufacture of Bovril are carried out in London, England, under up-to-date hygienic conditions and scientific control and are subject to regular government inspections.

Analysis (submitted by manufacturer).—

	per cent
Moisture	39.1
Ash	18.5
Sodium chloride (NaCl)	13.6
Total nitrogen	6.2
Nitrogenous substances estimated as protein (N × 6.25)*	38.8
Insoluble nitrogen	1.2
Creatin	1.4
Fat (ether extract)	0.2
Carbohydrates (by difference)	3.4

* The nitrogen determined includes that of ammonium salts, purine and pyrimidine bases, mono and diamino acids and proteins.

Calories.—1.7 per gram; 48 per ounce.

Claims of Manufacturer.—For the preparation of bouillon, for seasoning and flavoring gravies, soups, stews, sauces and other table dishes and for the diet of the sick.

ALERDEX-PROTEIN-FREE MALTOSÉ AND DEXTRINS

Manufacturer.—S. M. A. Corporation, Cleveland.

Description.—Essentially maltose and dextrins prepared by the proteolytic and diastatic hydrolysis of noncereal starch; free of protein coagulable by ordinary protein precipitation reagents; a spray dried nonhygroscopic powder.

Manufacture.—An infusion of malt of known proteolytic and diastatic activity is admixed with a suspension of noncereal starch in water. The temperature and pH of the mixture are carefully controlled to permit hydrolysis of the protein to non-protein substances. The action is continued until tests on the filtered solution show the absence of proteins precipitable by the ordinary protein reagents. Pepsin or trypsin may be used to hasten the proteolytic action. At the conclusion of this step the temperature and pH are adjusted to that best suited for the diastatic conversion of starch to dextrins and maltose. The conversion is followed analytically by determining the reducing sugar content of the solution at regular intervals. When the conversion has proceeded to the desired point, the enzymatic action is stopped by heat. The mixture is filtered and the clear filtrate is partially evaporated under reduced pressure, is spray dried to a powder and automatically packed and sealed in tins.

Analysis (submitted by manufacturer).—

	per cent
Moisture	3.0
Ash	0.5
Fat (ether extract)	0.0
Hydrolyzed protein (N × 6.25)	0.5
Reducing sugars as maltose	50.0
Dextrins (by difference)	46.0

Calories.—3.9 per gram; 111 per ounce.

Claims of Manufacturer.—For use as a carbohydrate supplement to milk in infant feeding formulas. Especially intended for diets planned to be free of cereal protein. Does not cake on exposure to air.

NATIONAL LIVE STOCK AND MEAT BOARD NUTRITIONAL EDUCATIONAL ADVERTISING LEAFLETS

Sponsor.—The National Live Stock and Meat Board is an organization founded to promote the interest of branches of the live stock and the meat industry.

These educational leaflets comprise tables presenting diagrammatically the relative calory, calcium, iron, copper, phosphorus, protein and vitamin values of certain common foods, accompanied by brief and simple educational information on the rôle of protein, vitamins, phosphorus, calcium, iron and copper in nutrition and the energy requirement in nutrition.

WHITE CRYSTAL TABLE SYRUP

(85 Per Cent Corn Syrup, 15 Per Cent Rock Candy Syrup)

Packer.—D. B. Scully Syrup Company, Chicago.

Description.—Table syrup; corn syrup base (85 per cent) with rock candy syrup (15 per cent).

Manufacture.—The corn syrup (THE JOURNAL, March 5, 1932, p. 817) is mixed with the rock candy syrup in the indicated proportions. The rock candy syrup is prepared by melting extra large crystal cane sugar. The melt is boiled and filtered. The mixture is heated to 80 C. and automatically filled into cans.

Analysis (submitted by manufacturer).—

	per cent
Moisture	23.8
Ash	0.2
Fat	0.0
Protein (N × 6.25)	0.05
Reducing sugars as dextrose	30.6
Reducing sugars as dextrose after invertase inversion	2.2
Sucrose (estimated from reducing sugars)	7.8
Dextrins (by difference)	35.4
Sulphur dioxide	0.002
Carbohydrates (by difference)	76.0

Calories.—3.0 per gram; 85 per ounce.

* No methods are available for accurately determining the composition of syrups of this nature; therefore the foregoing analysis is roughly approximate.

Claims of Manufacturer.—For cooking, baking and table use, or as a carbohydrate supplement for milk modification for infant feeding.

REPORTS OF THE COMMITTEE

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

RAYMOND HERTWIG, Secretary.

Acceptance Withdrawn

HORLICK'S MALTED MILK

Manufacturer.—Horlick's Malted Milk Corporation, Racine, Wis.

The container label and advertising present explicit infant feeding formulas for infants aged from 1 week to 12 months. The promulgation of feeding formulas in lay advertising is considered to be in conflict with the best experience, authoritative judgment and basic principles in infant feeding. The feeding of an infant by routine feeding formulas and instructions distributed by food manufacturers, or according to directions, printed materials, or advice of any person other than the attending physician who can personally observe the condition of the baby, may seriously endanger the health of the infant. The feeding of the baby during the first year is of fundamental importance to its health; wrong feeding may be disastrous. Every infant, the breast fed and doubly so the artificially fed, should be under the supervision of a physician experienced and skilled in the care and feeding of infants.

The manufacturer when informed of these opinions expressed himself as unwilling to remove the feeding formulas from advertising addressed to the public for merchandising reasons. The acceptance for Horlick's Malted Milk is being withdrawn for the preceding reasons; the product will therefore no longer be listed among the Committee's accepted foods.

Acceptance Withdrawn

WHITEFIELD GENUINE ORANGE JUICE

WHITEFIELD GENUINE GRAPEFRUIT JUICE

WHITEFIELD GENUINE ORANGE BUTTER

Manufacturer.—Los Angeles Sales Company, Los Angeles, formerly Whitefield Citrus Products Corporation of California, Ltd., Fullerton, Calif.

The manufacturer has not provided the required information and data for these foods which are now being called for by the Committee under its present Rules and Regulations for all its accepted foods. Therefore, the acceptance for these Whitefield Genuine Orange Juice, Whitefield Genuine Orange Butter and Whitefield Genuine Grapefruit Juice products and the privilege of use of the Committee seal or statements of acceptance on the labels and in the advertising are being withdrawn.

Not Acceptable

CERTAINTY LIMA BEAN FLOUR

The Beaver Valley Milling Company, Des Moines, Iowa, submitted to the Committee on Foods a lima bean flour called "Certainty Lima Bean Flour" prepared from selected dried California lima beans.

Discussion of Label.—The label prominently states that this flour is "highly alkaline in its reaction in the system," is "An anti-acid food product" and "Certainty Lima Bean Flour was prepared at the request of physicians who desired it for use in the diet in cases of high blood pressure, hyperacidity, and some kinds of kidney troubles. Its alkaline reaction in the body, according to medical authorities, is more than seven times as great as oranges, four times as great as carrots and five times as great as potatoes. It is highly recommended, not only for special diet in any form of excessive acidity, but as a delicious and satisfying addition to the ordinary diet, tending to counteract the acidity of modern foods."

Bread made according to the package directions was heavy and coarse and not a "delicious and satisfying addition to the ordinary diet." The prominent unqualified claim "an anti-acid

food" may imply to the public that the product is recommended for neutralizing stomach acidity, which it will not do. Its alkalinizing effect in metabolism in the small amounts that could readily be eaten is negligible; metabolic acidosis such as occurs in certain disease conditions would not be appreciably affected. The claim that the product was "prepared at the request of physicians who desired it for . . . cases of high blood pressure, hyperacidity and some kinds of kidney troubles" is an objectionable vague reference to physicians and is deceptive in that the public is led to infer that physicians have proved the product therapeutically beneficial in the diseases mentioned, which is not the case—at least such claims have not received recognition by authoritative critics.

The discussion of diseases in lay advertising is conducive to self-medication, which conflicts with the best health interests of the public. The sick should be under the care of competent physicians. The prominent claims of alkalinity produced by the lima bean flour in the body connote some marked "health" or curative advantage to be obtained from use of this food or other similar potentially alkaline foods which is by no means established. When this lima bean flour is admixed with wheat flour as directed for the preparation of bread, its potential alkalinity is greatly reduced. It is an established fact that the urine can be alkalinized by alkaline ash foods; however, that there is any value in this alkalinization has not been established and, until it is, prominent claims or undue emphasis on alkalinization in connection with foods is objectionable in that such claims lead the public to believe that alkaline foods have mysterious "health" values, which have not been scientifically or clinically recognized or identified. The claim that this flour tends "to counteract the acidity of modern foods" is inappropriate; it discriminates against wholesome foods with an acid ash, such as breads, eggs and meat.

The company was advised that the label statements for this lima bean flour as a whole are misinformative, misleading, and deceptive to the public. The company has not taken steps to correct the label but expresses itself as desiring to use "some medicinal claims . . . in selling the product." This food, therefore, is not listed among the Committee's accepted foods.

Not Acceptable

SUNNY BOY SHORT PATENT FAMILY FLOUR (BLEACHED)

GRANDMA'S LOAF FANCY PATENT HARD WHEAT FLOUR (BLEACHED)

AETNA'S BEST FANCY PATENT FLOUR (BLEACHED)

GOLDEN DREAM FANCY PATENT FLOUR (BLEACHED)

LARABEE'S LARABELL FANCY PATENT FLOUR (BLEACHED)

MISS KANSAS FANCY PATENT FLOUR (BLEACHED)

The Commander Larabee Corporation submitted to the Committee on Foods the preceding list of flours, all of the grade recognized in the milling industry as "straight" flours; that is, flours composed of all the mill flour streams recognized as utilizable for commercial bakeries or home baking purposes.

Discussion of Names.—The respective flours bear such special designations as "short patent" and "fancy patent," which names are recognized as appropriate only for those flours differing essentially in flour mill stream composition from "straight" flour. Patent flours from the baking standpoint are considered higher grade products than are "straight" flours and usually demand a higher price. The present designations, being incompatible with the nature of the flour, are misinformative, misleading and deceptive.

The corporation when informed of this opinion has not indicated willingness to change the designations accompanying the trade names in accordance with the Committee's recommendation. These flours, therefore, are not listed among the Committee's accepted foods.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 15, 1933

PSYCHOANALYTIC ATTITUDES

It has been some twenty-seven years since the freudian theory first came to the United States through an article published by Boris Sidis in the *Journal of Abnormal Psychology*. This method of investigation and treatment had been known in Europe since 1881, when Sigmund Freud of Vienna developed his theory of the subconscious or unconscious, with a startling emphasis on sex, the sex urge or the libido as the basis of most human motivation. In the years that have passed, even Freud has retreated largely from this earlier position, so that today the interpretation of the libido may include many important motivations and urges other than the purely sexual. Nevertheless, there are many critics of psychoanalysis who have failed to keep pace with this changing point of view and who still write blasting anathemas against the name and all it represents. In this issue appears a letter by Dr. Karen Horney calling attention to two recent publications of this character.

An evaluation of the freudian contribution at this time is, no doubt, as difficult as it was fifteen years ago. The science, if it be a science, is still relatively new. As has been said, it is changing constantly. It is being submitted to intensive investigation in well controlled institutions and before scientific organizations. The initial act of revulsion, representing a puritanical response to the new point of view, is gradually being modified among those who are beginning to realize that the freudian contribution is a significant one. Intellectual channels have been stirred by the importance of the psychoanalytic method for an understanding of human conduct. Dramatists, novelists and poets have reflected its methods in literature and in art.

In the most recent volume of his book "Our Times," Mark Sullivan endeavors to determine the present attitude toward the freudian doctrines. He realizes that the freudian discussions have left some enduring effects, that they have revolutionized the treatment of the mentally ill, that they have led to freedom from self consciousness about talking of sex between the sexes, that

they have broken down some of the false sentimentality about women, and that the conclusion is far from visible so far as actual evaluation of the freudian doctrines is possible. Thus he cites two diverse points of view:

As to judgments about Freudianism in 1932, Dr. William A. White, head of Saint Elizabeth's Hospital, Washington, D. C., writes the author:

"To my mind, Freud's greatness lies in his having evolved an entirely new point of view and a new method which will ultimately discover the facts which it is capable of discovering and discard the errors which are incident to its employment, just like any other scientific method or point of view. . . . The whole situation in my mind is quite similar in its history to the development of anatomy and utilization of dissection. There was just the same feeling of outrage against the early anatomists who insisted upon dissecting the human body, and these same early anatomists discovered all sorts of things that were not so, and subsequently had to be corrected by future observations more accurately checked up. It is quite the same with the analysis of the human mind. It is equally resented, and I have no doubt mistakes are made in the same way."

Another eminent neurologist, Dr. Frederick Peterson of New York, in a letter to the author in 1932, declared, with italicized emphasis, that "*Freudianism is a voodoo religion characterized by obscene rites and human sacrifices.*" He adds that psychoanalysis has in innumerable cases caused mental aberration, insanity or suicide, and that much of the work of present day neurologists has come to be the "reconstruction of unfortunate victims of Freudianism."

Mr. Sullivan recognizes as more important than the freudian doctrine of behavior the biologic urge to function. The urge of an artist to paint, of a poet to write, of a horseman to ride, of a farmer to plow and plant, is as powerfully animating a motive of behavior as the motives suggested by Dr. Freud. He insists that a man born with a passion for the sea may, through circumstances, be carried into the career of a bank clerk or spend his days in an elevator cage and that such a man becomes as much a case of repressed desire as any case that Freud catalogues. Finally, he adds: "Physicians, psychiatrists, like Dr. Freud and his disciples, have their own urge to function; and their zest in it may carry them, and the theories that they evolve, to extremes—at which they encounter the historian's urge to doubt."

Far too many critics of psychoanalysis confuse the contribution of Freud himself, and of recognized scientists who have devoted themselves to this field, with the activities and actions of numerous charlatans who have taken advantage of the public interest in sex to exploit themselves either for commercial returns or for notoriety. It is important in criticizing psychoanalysis to distinguish clearly between the scientific investigator and the charlatan. It would be folly to deny that the work of Sigmund Freud is a fundamental contribution leading eventually toward greater happiness for mankind. It would be equally fallacious to assert that it is today an unmixed blessing. In view of the dynamic nature of the freudian contribution, the physician will do well to concern himself with those aspects which touch the diagnosis and treatment of disease, and to recognize the necessity for controlled study which must finally come as a part of the established curriculums of universities.

THE ETIOLOGY OF PUERPERAL FEVER

The continuing high maternal death rate in this country is a subject of great concern. A conservative conclusion from statistical reports of maternity clinics in different parts of the world shows puerperal infection to be the cause in 30 per cent of the deaths following childbirth. These reports also show that the organisms found in the blood stream in from 70 to 90 per cent of the cases are hemolytic streptococci. That the streptococci are responsible for most severe puerperal infections has been known since Mayrhofer, in 1865, found the organism in smears from the tissues and Pasteur, in 1878, cultivated the streptococci from fatal cases. Further evidence of the streptococcic etiology has been presented from time to time by the epidemics of puerperal infection in maternity hospitals traced to this organism. While the severe and fatal forms of puerperal infection are usually associated with hemolytic streptococci, the milder forms are traced to localized uterine infection, caused by a variety of organisms, including nonhemolytic streptococci, colon bacilli, gram-positive bacilli and cocci.

It is generally held that organisms present in the vagina before delivery seldom cause puerperal infection. This is supported by experimental work, notably that by Taylor and Wright.¹ These workers made vaginal cultures from 1,123 pregnant women and found hemolytic streptococci infrequently before delivery. In no case was there undoubted evidence of the production of sepsis by hemolytic streptococci present before delivery. The organisms present in the antepartum vagina were listed as *Staphylococcus albus* and *aureus*, diphtheroid bacilli, colon bacilli, and nonhemolytic, hemolytic and anaerobic streptococci. They also found that one of the chief changes in the genital flora following delivery is an increase in the colon bacilli, and these produce a certain amount of sepsis. This is one important source of infection which it should be possible to reduce. From the studies by Taylor and Wright, and others, it would seem that there is some slight risk on account of the bacteria in the vagina before delivery, but that it is the bacteria entering the genital tract shortly before, during or after labor that are practically always responsible for severe infection.

Since severe and fatal puerperal sepsis most often is due to hemolytic streptococci by analogy with other known streptococcal infections, such as scarlet fever and erysipelas, one would expect advances in specific therapy. Numerous efforts are being made to determine what particular strains of this organism are found, and especially if any of them are related to the strains causing scarlet fever, against which there is effective serum for active and passive immunization. Lash and Kaplan² obtained a toxin from puerperal hemolytic

streptococci with which they produced antitoxin that protected rabbits against the lethal dose of the organism. Later they³ succeeded in preparing an antitoxic serum that gave good results in cases of acute endometritis with septicaemia due to hemolytic streptococci. Of their patients receiving antitoxin, 32 per cent died, while in the control group 61 per cent died. The difficulty in this form of specific therapy is that probably immunity to certain strains of streptococcus does not imply immunity to all, because puerperal infection may be caused by numerous distinct strains of hemolytic streptococci. Several reports have appeared in the literature of cases of puerperal infection treated with scarlet fever antitoxin. Its effect in most cases was entirely antitoxic, and the degree of such effect depended on whether the infection was by the scarlatinal organism or by one closely allied to it. The consensus seems to be that scarlet fever antitoxin has a specific value in the treatment of puerperal and post-abortive cases of sepsis due to hemolytic streptococci.

Efforts have been made to determine also the incidence of puerperal infection in those who are immune to scarlet fever, as evidenced by a negative Dick test. In their review of 8,000 cases of puerperal infection, Adair and Tiber⁴ suggest that women who have had a previous infection with the streptococcus of scarlet fever are less liable to a morbid puerperium. Hudson⁵ studied this problem in 188 pregnant women, of whom 29 were Dick positive, 43 had been immunized and 100 were Dick negative. There were no deaths from childbirth in this group and only eight patients developed infection of pelvic origin, and all of these were Dick negative. In a series of 600 women, 22 per cent of whom were Dick positive, Baird and Cruickshank⁶ found little difference in the puerperal morbidity rates of the Dick positive and the Dick negative groups. Salmond and Turner⁷ and Stent⁸ have also recorded their results in two series of 533 and 500 women, respectively. In neither group was there sufficient evidence to support the view that a positive reaction to scarlatinal toxin is an index to susceptibility to puerperal sepsis. Stent found a higher incidence of severe sepsis in the Dick positive than in the Dick negative groups—four out of fourteen as compared with five out of forty-six. These results correspond with those of Baird and Cruickshank, which showed that out of eight Dick positive cases with puerperal sepsis, seven, or 87 per cent, presented severe infections whereas only ten of twenty-one, or 47 per cent, of the Dick negative group presented severe

3. Lash, A. F.: The Therapeutic Value of a New Concentrated Streptococcus Antitoxin in Puerperal Fever, *Am. J. Obst. & Gynec.* **17**: 297 (March) 1929.

4. Adair, F. L., and Tiber, L. J.: Infection in the Puerperium with an Analysis of 8,000 Cases, *Am. J. Obst. & Gynec.* **17**: 559 (April) 1929.

5. Hudson, G. E.: Scarlet Fever Immunity and Streptococcal Puerperal Infection, *Illinois M. J.* **60**: 328 (Oct.) 1931.

6. Baird, Dugald, and Cruickshank, Robert: Dick Test in Pregnancy and Its Relation to Puerperal Sepsis, *Lancet* **2**: 1009 (Nov. 8) 1930.

7. Salmond, Margaret, and Turner, Beatrice: The Dick Test in Pregnancy, *Brit. M. J.* **2**: 145 (July 27) 1929.

8. Stent, Lois: Dick Test in Relation to the Incidence of P Infection, *Lancet* **1**: 1066 (May 17) 1930.

1. Taylor, Joan, and Wright, H. D.: The Nature and Sources of Infection in Puerperal Sepsis, *J. Obst. & Gynaec. Brit. Emp.* **37**: 213, 1930.

2. Lash, A. F., and Kaplan, Bertha: Puerperal Fever. Streptococcus Hemolyticus Toxin and Antitoxin, *J. A. M. A.* **86**: 1197 (April 17) 1926.

sepsis. Streptococcus antitoxic immunity may not prevent the invasive action of the streptococcus, as is shown by the occurrence of streptococcus tonsillitis in individuals artificially immunized to streptococcus scarlet fever toxin, but the immunity might be expected to modify the severity of the infection, as in fact it does, for those immunized individuals do not develop scarlet fever. The weight of opinion seems to be that although a negative reaction to the Dick test in a parturient woman does not indicate an insusceptibility to streptococcal infection, it does reveal an antitoxic immunity which may modify the severity of the infection or help to localize it, should it occur.

It would seem that there has been too much of a tendency to regard puerperal infection as a distinctive disease. There seems little justification for regarding it in any such light. There is an area of what is practically traumatized tissue exposed to infection by organisms of diverse kinds and of varied origin. What happens depends, as in all infections, on the nature and virulence of the organism, on the local condition it finds for multiplication and on the resistance of the patient. The destruction of all streptococci and other organisms of sepsis local both to the patient and to the obstetrician is obviously the grand ideal, but this has not been achieved. The main harbors of sepsis, however, are known; the routes and modes of infection can to a large extent be stopped or countered, while tissue resistance must be exalted, if a method can be found, and preserved at its highest level by avoiding all unnecessary tissue damage.

Current Comment

PHILADELPHIA'S PLAN FOR CHILDREN WHO NEED EYE GLASSES

The repute of Philadelphia as a center in the field of ophthalmology bids fair to be enhanced through a plan of the Philadelphia County Medical Society to determine the presence of defects of vision in thousands of children. A committee was appointed to investigate the situation among the school children. It was found that in the last fiscal year 21,202 children had been recommended for eye glasses. Of this number, more than 64 per cent had not received attention from the dispensary eye services in Philadelphia, from private physicians, or otherwise. This large percentage of untreated eyes was practically the same three years ago. While the clinics always appear crowded with children, during the busiest of the last six years only 4,744 children sought service at eye clinics. The committee assumes that this is due either to a reluctance to avail themselves of clinic service or to their inability to pay the fees of ophthalmologists. To determine the economic condition of these prospective cases of handicapped eyes, school nurses visited the homes of the last two children on their lists of those who were visually defective. They found among 147 unselected

families that the median income for the entire group was \$7 a week. There were 30 families among the 147 that were able to pay something for eye service, a percentage of 20.4. The plan proposed by the society to provide eye service for the children of these families calls for the volunteering of ophthalmologists to accept cases under a special basic fee schedule, which may be amended by the nurse according to the special situation of the family. The ophthalmologist may select the hours to suit his convenience. The nurse will provide him with statements of the parents' financial status. The committee of the county medical society is asking all approved ophthalmologists of Philadelphia if they are willing to treat the poor, but not indigent, school pupils on the basis of this schedule.

THE SOURCE OF INFECTION IN ADULT TUBERCULOSIS

In the last few years a change has occurred in the trend of theory on the etiology and pathogenesis of adult tuberculosis. It has been recognized for many years that the common excavating, upper lobe tuberculosis of adult life represents a reinfection or "super-infection" occurring in human bodies already the seat of an old childhood infection, and by almost general consent the modified anatomic character of the second infection has been explained as the result of a new immunologic state referable to the first infection. Uncertainty has always existed, however, about the source of the second infection. Until recently the majority of students of the problem seem to have felt that it was endogenous. More specifically they believed that various stresses and strains broke down an acquired resistance, permitting tubercle bacilli from the older lesion to acquire new footholds. In support of this hypothesis, observations were cited purporting to show that the incidence of tuberculosis was no greater in physicians, nurses, relatives and others in close contact with tuberculous patients than in those not so exposed. A study of 40,000 married couples by Pope and Pearson¹ has often been quoted in support of this view. At present a reversal of this conception seems imminent. Reports of studies of tuberculosis among large groups of college students,² while cautious in statement, all convey the impression that their authors consider tubercle bacilli from outside contacts, rather than from old latent tubercles within, as the source of the infection. Recently, moreover, a new study of marital tuberculosis has appeared, in which conclusions are reached that are exactly opposite to those in the monograph of Pope and Pearson. Using roentgenographic methods, Opie and McPhedran³ have found that husbands and wives in marital contact with tuberculosis are infected from five to nine times as often

1. Pope, E. G., and Pearson, Karl: *Drapers Company Research Memoirs: III. Marital Infection*, Dept. of Applied Mathematics, University College, University of London, 1908.

2. Hetherington, H. W.; McPhedran, F. M.; Landis, H. R. M., and Opie, E. L.: *Tuberculosis in Medical and College Students*, *Arch. Int. Med.* 48: 734 (Nov., pt. 1) 1931. Myers, J. A., and Wulff, Marjorie: *Eleven Years' Observations on Tuberculosis Among University Students*, *Am. Rev. Tuberc.* 26: 530 (Nov.) 1932. Soper, W. B., and Wilson, J. L.: *The Detection of Pulmonary Tuberculosis in Three Thousand Students Entering Yale University*, *ibid.*, p. 548.

3. Opie, E. L., and McPhedran, F. M.: *Exogenous Tuberculous Infection of Adults: Marital Tuberculosis*, *Arch. Int. Med.* 50: 945 (Dec.) 1932.

as persons with no known contact with this disease, the higher incidence being found in those cases in which one partner had constantly positive sputum. The question is one of more than academic interest. The direction of effort for tuberculosis control in adults rests on its answer. According to the older theory, chief attention should be devoted to avoiding or reducing the intensity of strains that might permit the flaring up of old latent tuberculous infections, largely an individual matter, whereas on the basis of the newer view continued emphasis should be placed on such hygienic measures as will stop the spread of contagion at the source.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., central standard time, over Station WBBM (770 kilocycles, or 389.4 meters). The subjects for the week are as follows:

- April 18. Hidden Diseases of Childhood.
- April 20. Athlete's Foot.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

- April 22. Measles.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Twenty-Ninth Annual Meeting, held in Chicago, Feb. 13 and 14, 1933

(Continued from page 1116)

DR. HARRY E. MOCK, Chicago, in the Chair

JOINT SESSION OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS AND THE AMERICAN CONFERENCE ON HOSPITAL SERVICE

NURSING

Nursing and Nursing Service

EFFIE J. TAYLOR, R.N., New Haven, Conn.: The work of the Grading Committee has shown the nursing profession where it stands. It has denounced the system which has placed the profession in its present state of chaos. The majority of the difficulties today in nursing are inherent in the system of education and apprenticeship service, though many of the problems, because of the world economic situation, nurses are sharing in common with other professional workers. Until recent years the cry of "shortage of nurses" was constantly about our ears. As directors of nursing services as well as educators, we were forced to put forth our greatest efforts to encourage young women to enter nursing schools which during the last decade were increased each year by hundreds in order to meet the urgent needs of hospital nursing services for the care of patients. As a profession, therefore, we are not without a certain responsibility for the oversupply of nurses, though the primary responsibility should not really be accorded to nursing.

Nursing is still suffering from the handicap of paying for its education in hours of work and service and from endeavoring to make these hours of work and service replace hours of supervision and instruction. The preparation of students for nursing in the majority of schools is largely a training through chance experience rather than through a conscious process of education.

The first objective of any professional school should be the education of the student for her vocation, and the service she may give should be incidental to her education for her profession. The fundamental objective of the nursing service of

the hospital is the daily and immediate care of the patients, and all other functions should be secondary. But the primary function of the school of nursing is in the hospital inevitably evaded. It is impossible when the school of nursing is charged with and responsible for the nursing service that the care of the patient will not become its primary function and its resources be used for the care of the patient. Therefore, since the chief resources of the school are its students, the first use of the students under existing circumstances will be for the care of patients. The amount of instruction which a student receives under this system depends largely on the ability of the master to teach, the number of students to be taught, and the time at the disposal of each group. In nursing schools even the apprenticeship system is exploited, since the major time of the student is spent in service with the minimum of supervision and instruction.

Miss Blanche Pfefferkorn, director of the department of studies of the National League of Nursing Education, has recently made a study of student activities in twenty-two open wards in ten different hospitals. The study was confined to an observation period of one day of ten hours in each ward. She discovered that the average time given directly to bedside instruction was approximately fifteen minutes per ten-hour day, and the average time of direct supervision was eleven minutes per ten-hour day, a total average of thirty-six minutes out of 600 minutes which could be recorded as teaching. The figures ranged from 0 to 115 minutes of instruction and 0 to 94 minutes of supervision. In two wards during an entire day no time was recorded for teaching, and in fifteen wards less than twenty minutes of the total 600 was recorded for teaching. In the study, the maximum amount of supervision recorded was ninety-four minutes. In thirteen wards no time was recorded for supervision, and in eighteen the supervision amounted to less than twenty minutes. In another study in which the domestic or non-nursing duties were tabulated for both graduate staff and student nurses, a remarkable and significant picture is presented. "The minimum amount of time spent by graduates in non-nursing activities is 2 per cent of the total time, and by student nurses 3 per cent; but the maximum amount of time spent by graduates in non-nursing activities is 13 per cent and by students 67 per cent." The picture needs no comment. It is obviously convincing that when graduate nursing service is provided, maid and helper service is also provided; but where student service is depended on, the subsidiary staff is correspondingly smaller.

It is possible that from 2 to 3 per cent of subsidiary or non-nursing duties may be essential to the comfort and safety of the patient, but an assignment of non-nursing duties above a possible 10 per cent is an unwarranted use of the time of students, and even from an economic standpoint such use of students' time is open to question.

Some interesting figures have recently been received from the Grading Committee to uphold the statement that neither formal nor informal bedside instruction of student nurses is adequate to justify the use of the term "school" as applied to most of our present schools of nursing, for it is at the bedside that nursing can best be taught. The reason is obvious when it is found that the average or typical school out of a total of 1,146 reporting has approximately a daily average of 191 patients, with 56 student nurses, $4\frac{1}{2}$ head nurses, $2\frac{1}{2}$ supervisors and $1\frac{1}{2}$ instructors. Even on the apprenticeship basis this teaching and supervisory staff is exceedingly small, and one cannot but wonder that hospitals have been willing for so long a time to accept responsibility for a nursing service which, under the conditions made known through recent statistical studies, must inevitably be precarious. Very young student nurses inadequately taught and supervised are carrying a great responsibility. It is appalling to review the statistics on nursing at night, and to realize the paucity of the nursing staffs in most hospitals. We are told that we have an oversupply of nurses. If, however, hospitals throughout the land were sufficiently staffed, to say nothing of supplying adequate nursing care to the community, the majority at least of able nurses would be holding positions.

The ideal concept of education in nursing is based not on less emphasis on nursing activities concerned in the care of patients but on a new kind of teaching to insure more intelligent performance. Hospital nursing service may signify a high type of care to patients or it may signify a variety of

service to the hospital which enables it more economically to provide for patient care and to function more economically as a whole. Here lie some of the fine points of distinction in defining nursing service.

Education for nursing has provided an excuse for the hospital, and the system in practice has suggested an easy financial escape for the student. Education must be paid for by some one. Nursing education cannot be obtained without cost, and a part of this cost at least the student herself must pay. It is obvious that the hospital cannot provide both maintenance and education without receiving something in return, but education and service are incompatible when jobs are the first essential, when the conservation of time is the greatest factor, and when quantity of achievement supersedes quality in procedure. We have been struggling for many years with certain fixed ideas which we are now beginning to interpret as delusions. That they have served an end no one will deny. But with new insight into our previous mistaken beliefs we must attempt to make the obvious adjustments.

Comparative Costs of Undergraduate and Graduate Nursing

C. RUFUS ROREM, PH.D., Chicago: More than 20,000 nurses are now being graduated annually from the 1,800 nursing schools. The Committee on the Grading of Nursing Schools has estimated that 10,000 new graduate nurses annually would suffice to meet the prospective demands for nursing care for the predictable future. The customary argument in defense of a nursing school is that it saves money for the hospital. What is the effect of undergraduate floor nursing on the employment of graduate nurses for "special duty" and what is the effect of "special duty" nursing paid directly by patients on the payment in full of ordinary hospital bills? The experience of 9,000 families during a twelve-month period showed that the average costs of hospital care for families receiving such care was \$67, whereas the average expenditures for private duty nursing was \$74 for families receiving such care. It is possible that the employment of a special nurse may often interfere with the payment of a hospital bill, and it is well known that "special nursing" fees often interfere with the payment of reasonable fees for the services of physicians. A table was made of the number of undergraduate and graduate nurses employed in the "morning care" of patients in thirty general hospitals, with an average occupancy on the day of the study of 140 patients. These hospitals were those selected as samples by Dr. May Ayres Burgess for the purpose of indicating the ratio of student and graduate nurses to patients. The table shows that on the day of the study there were 250 graduates and 1,400 undergraduates on floor duty in these thirty hospitals. In addition there were 340 "special duty" graduate nurses and 1,400 undergraduate nurses serving in the hospital for morning care during this day. By using annual salary equivalents, one can estimate the total annual costs to the hospital and to the patients for "services" from these undergraduate and graduate nurses; the total costs to the hospital would be \$1,355,000. But the total costs to patients would include the fees to special duty nurses also. When the annual payments to special duty nurses are considered, there must be added nearly a million dollars, an expenditure that falls on less than one fourth of the hospital patients but nevertheless increases the total by 65 per cent.

In the foregoing calculations, the costs of graduate nursing by floor supervisors and floor duty staff are estimated at the average rate of \$1,800 annually for salaries and maintenance. A rate of \$700 is used for the annual maintenance costs, monthly allowances, and educational procedures of the undergraduates on day duty. For the graduate duty nurses a rate of \$8 a day, which includes a daily rate of \$6.50 to the nurse and \$1.50 for nurses' board, is estimated as the basis for the annual payments necessary to maintain a staff of 340 graduate nurses continuously on "special duty" during the day services. Whether these estimated salary equivalents are applicable to a particular hospital does not affect the nature of the problem, although they would influence the solution of the problem in any given institution. These institutions, however, were themselves above average in the ratios of graduate to undergraduate nurses, for even in 1932, 68 per cent of the schools participating in the second "grading" did not employ even one graduate floor duty nurse. Using these figures, and as shown in the

table, the total cost of nursing "to the hospital" is $1\frac{1}{2}$ millions annually, and the total cost to the patients is $2\frac{3}{4}$ millions.

What would be the effect on the total costs to patients of using graduate staffs in these institutions? Another table was made, setting forth estimated personnel and costs to the hospitals and the patients on a graduate staff basis. These estimates would vary in their applicability from one hospital to another. The primary purpose of the calculation is to illustrate the nature of the problem and to indicate the possible effect of the "special duty" situation on costs to patients. In the estimates it is assumed that the number of graduates employed as supervisors and previously on floor duty would be unchanged, as would the average salary equivalent. It is assumed that the 1,400 undergraduates would be replaced with 900 graduates (two graduates for three students) at average salaries and maintenance of \$1,800 a year. The change would raise the costs to the hospital for these services from \$1,355,000 to \$1,725,000, an increase of \$370,000. These estimated ratios of undergraduates to graduates, or the estimated costs of undergraduates, might not apply to a particular hospital. The number of graduates needed to replace the undergraduate employees would vary with the policy of the hospital as to the number of hours and kinds of floor duty regularly required of undergraduates. Hospital directors should not maintain too stoutly that a student is "as good" as a graduate, or even "nearly as good"; for, if the average technical and economic value of students approaches that of graduates, one is forced to question the quality of education in the nursing school. To be sure, a hospital director may frankly admit that his nursing school is a farce, but usually those who proclaim the economic and technical virtues of the undergraduates also uphold the paradoxical view that their own graduates are well educated.

The rate of pay for graduate floor duty nurses in the foregoing illustration is, of course, much higher than would be necessary to enlist the full time services of graduate nurses. Even during times of prosperity, a salary of \$100 a month plus maintenance is considered good income. At the meetings of the American Hospital Association in Detroit in 1932, many hospital directors reported that they had obtained any necessary number of graduate nurses at monthly salaries ranging from \$25 to \$50, plus maintenance. These, however, are "depression figures."

The shift from undergraduate to graduate nursing would undoubtedly influence the average number of "special duty" graduate nurses employed by the private patients. In the second table the calculations were based on an estimated reduction of 40 per cent in the amount of special duty floor nursing. The validity of such an estimate for a particular hospital would be influenced by such factors as the actual or presumed improvement in quality of floor nursing for private patients, the reduced pressure on hospital administrators and physicians to "make work" for the nursing school alumnae, and the possibility of using members of the full time graduate staff for "special duty," either on a group nursing basis or on an hourly basis within the hospital. If it is assumed that there would be 200 graduate special duty nurses continuously on day duty for these 1,400 patients in these hospitals, the total annual costs of special nursing at \$2,000 a year would be \$400,000 a year.

A shift from undergraduate to graduate nursing would, according to these calculations, more than double the number of nurses continuously employed in the care of hospital patients. There would be 1,350 instead of 590 nurses employed to perform the nursing services to patients in these hospitals. The net result of this shift would be to increase the hospital operating costs by \$375,000 annually. The total costs to hospital patients for nursing care, however, would be reduced by approximately \$216,000 because of the decreased amount of "special duty" graduate nursing service required in the hospitals.

Those who disagree with the general implications of these figures may argue that several important factors have been overlooked.

Data from the Committee on the Costs of Medical Care indicate that half of the total payments by families for nursing services is made by families with annual incomes of \$5,000 or more. In 1928, this group comprised only 10 per cent of the white families in the United States. The tendency for a special nurse to be engaged for the care of a patient varies directly with the annual income of his family. Data from the com-

mittee indicated that special nurses were engaged for 7 per cent of the cases hospitalized for one day or more from families with incomes of \$1,200 or less. The rate was 16 per cent for families with average incomes from \$2,000 to \$3,000, and 69 per cent for those with incomes above \$10,000. The support of the nursing profession must have a wider base than the upper 10 per cent of American families, if it is to be of greatest service to the American people.

If the economic effects of undergraduate nursing were to be measured strictly in terms of the hospital expense budget, probably many hospitals would lose by a shift to undergraduate nursing staffs. But when the economic effects on hospital patients, the nursing profession, and the general public are considered, the possibility of gain is less apparent for the individual hospital and reflects a definite loss for the nurse and for the public.

The Function of the Nurse as Defined by the Physician

DR. GEORGE H. COLEMAN, Chicago: No better statement of the ideal qualifications of nurses, from the standpoint of physicians, can be formulated than has been done by the Committee on the Grading of Nursing Schools, which is as follows:

What they want are young women of good breeding and attractive personality with high professional standards which lead to the meticulous following of medical orders. They want women, so sensitive, alert and finely observant and with such a wealth of experience behind them, that they will be able to observe changes in symptoms and report them quickly and intelligently to the physician. Even more than this they want nurses who are graduates of good schools, who have a thorough grounding in bedside nursing and who can understand the patient's viewpoint—nurses "who know how to make the patient comfortable."

One of the most important tasks confronting us is to devise ways and means of reducing the quantity and improving the quality of nurses to the end that there will be employment for all nurses and so that the patients will have the service they are entitled to receive. An ever increasing amount of work which was formerly performed solely by the physician is now relegated to the nurse. The complete cooperation of the medical profession, the nursing profession, hospitals, and the lay public is essential in such a project. Let us remove the trade or vocation stigma from nursing and raise the educational requirements and training standards to a genuinely professional level in order that nursing may successfully compete for students with the other professions now open to women. Let us control nursing schools and nursing practice as medical schools and practice have been and are being controlled. There seems to be no evident reason why such regulation could not be accomplished as effectively and as quickly as it has been done in medicine through the guidance and efforts of the Council on Medical Education and Hospitals.

If the education of nurses becomes a public responsibility and becomes the recipient of public support, no nurse (unless she has by postgraduate study or by long and special experience become qualified as an expert nurse in some particular field) should refuse any kind of duty requested from her. Discrimination by nurses against certain types of cases, against certain types of duty, such as day or night work, hospital or home nursing, and their unwillingness to accept duty during the holiday seasons is one of the most serious complaints registered against nurses by both patients and physicians.

I hope to see a real extension of the so-called hourly nursing. Patients who have had the service of the hourly nurse are practically unanimous in their appreciation and satisfaction in the service obtained. Such success in this venture is due to the high type of socially minded nurse who volunteered to engage in this experiment.

From the standpoint of the physician, so-called practical nurses are in the main quite unsatisfactory because they have had little or no instruction and almost no hospital experience. From the standpoint of the patient, practical nurses are often satisfactory not only because of the lessened expense but also because they are willing to help out with the housework.

There is a great need for a type of nursing service which would be sort of midway between the practical nurse and the registered nurse.

The Plight of Nursing

DR. C. W. MUNGER, Valhalla, N. Y.: What can we as hospital administrators do to alleviate the pressing problems of the moment? First we must study the schools of nursing for whose operation we are responsible. We must collect data con-

cerning the employment situation among the alumnae of our schools. We must study the future economic prospects of these graduates. We can no longer report, with pride, that "this year's class exceeds in number that of any previous year." We should be required instead to prove that a reasonable proportion have hope of employment, if not now, at any rate in the more rosy future for which we are hoping. Beyond the slightest doubt, hundreds of schools of nursing should be completely abandoned; thousands more should curtail their output. Early in the present difficulty, nursing leaders were wise enough to see that a period of unemployment among nurses might be utilized by many of them as a chance for professional self improvement, through further training and study. Postgraduate courses, infrequently encountered in the past, have increased in number, and with few exceptions these courses have long waiting lists. Is this not, temporarily, a "way out" for many hospitals desiring to reduce undergraduate groups? We hospital administrators can but admit that nursing, through students, has paid us well. We have or have not, as the case may be, compensated the student nurse through valuable instruction, but in either case our financial outlay for the student-nursing of our patients has not been great. Even at the present low salaries at which institutional nurses may be engaged, we would add an impossible burden to our already overtaxed budgets, were we to attempt forthwith to replace all students by a paid graduate service. It seems justifiable, therefore, that we should look, for the time being, to the postgraduate nursing student as a partial solution to our problem. Some hospitals have evolved plans whereby a patient requiring day and night special nursing is able to employ three nurses on eight-hour duty at the same price he formerly paid for two nurses on ten-hour duty. This plan seems to have worked satisfactorily, in some instances. While it no doubt gives better service to the patients, it fails, nevertheless, to consider the fact that the plan does not reduce the patient's total bill. It seems obvious that there can be no hope of stable employment in the nursing field at any time in the future unless we curtail production of nurses at its source; viz., the hospital school of nursing. Let us profit by the lesson which has been taught by the depression and resolve that never again will the hospital field indulge in a wholesale quasieducational program which has been the real cause of the sorry plight in which we now find the nursing profession.

DISCUSSION

DR. ERNEST E. IRONS, Chicago: As Dr. Coleman indicated, there is much resemblance between the present problems of nursing education and those encountered in medical education. Twenty-five years ago there were 160 medical schools in the United States—more than half the world's supply. Many afforded inferior training to their students, and the facilities in the best were much less than those offered today. An extensive survey was planned and carried out by the Council on Medical Education and Hospitals, created for this purpose by the American Medical Association. Standards of admission were raised; quality of teaching and clinical opportunity and quality of graduates were rapidly improved. The total number of schools was reduced from 160 to 76, 66 of which are four year class A schools. It is to be hoped that nursing education may profit by the experiences of medical education. The causes of production of inferior nurses seem to be the same as those of inferior doctors—careless selection, poor educational background, and poor instruction and training. One can't get far in the education of a medical student if he lacks ideals and personality, general cultural education, or training in the basic sciences. Nor can much be expected of a nurse who lacks a high school education and who enters the hospital nursing school to get room, board and a change of environment. In hundreds of hospital schools those in authority have continued to use the student nurses to get the work done and have been but little interested in quality of instruction. It is this profiteering in nursing education by hospitals that has contributed largely to the difficulties of the present situation. In 1926 there were 2,155 nursing schools in this country. Since then many hospitals have been established and presumably some of these have felt it incumbent on them to start a school. A few schools have been discontinued. The present trend is indicated by a report this month by Mrs. Burgess. "In the first grading study 1,397 schools reported 68,821 students, or an average of 49 students each. The corresponding figures for the second grading, about

three years later, show 1,383 regular accredited schools which took part in the second grading with 74,337 students, or an average of 54 students each. . . . While some hospitals are closing their schools, others are increasing the size of their schools and the total number of students being admitted is still increasing." Even in the past year, according to this report, in only six states have the numbers of students admitted been reduced, in two states they remain the same, and in the remaining forty states the first year class is larger than the second year class. These increases vary from 10 to 50 per cent. A complete solution of the nursing problem and a rectification of present errors is probably not immediately possible. Among the points suggested by papers today the following seem especially fitted to meet in part the present situation:

1. The immediate employment of considerable numbers of graduate nurses to replace student nurses in hospitals.
2. Reduction of number of student nurses in training schools, and the replacement of student labor by graduate nurses and maids or helpers.
3. Recognition that the cost of nursing education is not a proper charge on hospitals but should be provided for by endowment or by sources already available to other forms of education, for which the student nurse should pay. Recognition by the hospitals that the obligation assumed when the hospital establishes a school is not discharged by giving the student nurse bed, board and a place to work.
4. The elimination of allowances paid to nurses by 88 per cent of hospital training schools. This money, if available, should be expended on educational facilities.
5. The affiliation and, if possible, union of nursing schools with other real educational institutions. In many schools of nursing, no one at present is primarily interested in education.
6. The importance of distinguishing between endowment and subsidy in the various schemes of socialization of nursing that are likely to be offered during the present emergency, and to bear in mind that a dole is essentially a measure that tends toward parasitism and hinders progress.
7. The setting up of a mechanism to carry into effect such plans as may be agreed on, in the close cooperation with the Council on Medical Education and Hospitals of the American Medical Association.

KATHARINE J. DENSFORD, R.N., Minneapolis: May I emphasize some of the policies which Miss Taylor has brought before us. They are as follows: 1. Distinction between education and service. 2. Recognition that the hospital does not provide education but that it does provide good nursing care for its patients, the criterion of this service being not in terms of economy alone but also in terms of quality. 3. Establishment of a school of nursing as a separate unit of organization from the hospital. 4. Establishment of a school with education as its primary aim. 5. Assignment to the school of the specific responsibility of formulating the nursing curriculum with any assistance the school may wish from specialists in the various fields. 6. Building of a curriculum on the basis of community rather than hospital needs. 7. Recognition that the practice of nursing is at the bedside but that, to be safe and intelligent, this practice must be learned under expert supervision. 8. Provision of adequate teaching and supervision to guarantee both formal and informal teaching at the bedside. 9. Assignment of non-nursing duties to nonprofessional workers. 10. Choice of students on the basis of quality rather than quantity. 11. The relation of each group to other groups without the sacrifice of any group. Miss Taylor indicates that the number of schools to be desired is a moot question. Almost every one agrees, however, that there are too many schools. Since the community in so many instances does not need the school, and since as good or better care of the patient can be provided without, in frequent instances, additional cost, may there not be helpfulness of the medical, hospital and nursing, as well as lay, groups in the closing of all such schools? Almost as important, and, to my mind, almost more essential than the closing of schools, is the limiting of the number of students entering any school. No matter what the number of schools, if the number of students continues to increase, the present unsatisfactory conditions in nursing will continue. Many schools in the country have closed, but the number of students has not decreased, nor will it do so until there is helpfulness of all groups concerned in this problem of limiting the intake of students.

DR. FREDERIC A. WASHBURN, Boston: After studying these tables of statistics accumulated by various committees supported by various foundations at tremendous expense, if they

don't jibe with my own experience I feel that I have a right to question them. The gist of Mr. Rorem's argument is that the cost to the community is greater when a hospital does most of its nursing by pupil nurses, because pupil nursing service is so inferior that a large number of special nurses are needed and therefore the cost to the community is greater. The experience at my hospital completely controverts that argument. We have about 600 patient beds and about 600 nurses and orderlies; 300 in the training school, 240 graduate nurses, and about 50 orderlies, not counting special nurses. Our service is divided into three grades. One is for the Phillips House, which is the hospital for private patients, staffed entirely by graduate nurses. In that building the floor nursing is adequate. The class of people who go to the Phillips House demand special nurses to a large extent. Our expenditure in the Phillips House for special nurses in the year 1932 was \$85,000. The next group is the Baker Memorial, the hospital for people of moderate means, where the floor nursing is done by both graduates and pupils, a few more graduates than pupils. There every attempt is made to make the floor nursing more than adequate so as to save the patient the cost of special nursing. There we had about half pupil and half graduate nurses. There the expense for special nursing, including the group nursing, last year was \$45,000. The special nurse is put on only when it is absolutely necessary for the need of the patient. At the Phillips House the special nurse is put on by the caprice of the patient. The third group is the General Hospital, where the nursing is done almost entirely by floor nurses, and there the expense for special nursing last year was \$12,000 or less. It is an absolute reversal of the statistics which Mr. Rorem showed us. It will be contended, very likely, that the figures which I give you for a large, long-established Eastern general hospital are not typical of the situation in the country. I dare say that is true. So far as we are concerned, it would cost the hospital a great deal to give up its training school. We estimate that it would be costing \$137,000 more if we had no training school and did it by graduate nurses. It would not cost the community any less if we changed and had graduate nurses. I think I have demonstrated that, so far as we are concerned, so that argument of his seems to me to be refuted. I haven't any doubt that there are many hospitals conducting training schools that ought to give them up, because it would be less expensive for them to have graduate nurses; but those are the smaller hospitals. I am in full sympathy with the desire to cut down the number of nurses graduating. I should like to see the Massachusetts General Hospital have more graduate floor nurses. It would give us better continuity of work in the wards, it would cut down the size of the training school. But don't let us fool ourselves. If we are going to do it at the Massachusetts General Hospital, we have to produce \$137,000 a year.

ADDA ELDREDGE, R.N., Madison, Wis.: Recent graduates Dr. Coleman spoke of as being, because of their longer training, more up to date, but we might say also that recent graduates know more particularly the doctors' latest technic. The successful nurse realizes fully how little she was taught, the risks her patients ran because of how little she had to offer in an emergency, except and if she had common sense, so her every effort has been given to obtaining better teaching of the present-day nurses. I was one of those nurses twenty years ago. People expect more of her today. She was a luxury then. Today we think she is a necessity. Private duty was almost the only field in that day. Private duty nursing is one into which anybody can drop. We have many splendid women in private duty nursing, but it is a field into which anybody can go and no one passes on her qualifications. At the recent meeting of the National League of Nursing Education, which is now the educational department of the American Nurses Association, the board of directors went on record as desiring to work with the American Medical Association and the American Hospital Association, not only toward the improving of nursing schools but in solving such other problems as are involved in giving adequate nursing care to the sick. These associations can accomplish little without the public. Lay people must be back of our registries as well as on school of nursing committees. We need both the public and the physicians and we need to work together.

DR. GEORGE S. STEPHENS, Winnipeg, Manit.: The statement was made that "hospital administrators should not try to control nursing, which is a profession capable of self defense and self control." The hospital administrator is not a dictator. He also has to take orders and accept responsibility for everything that goes on. Boards of trustees a few years ago were educated to the point that there was a shortage of nurses. Advertisements appeared in some quite good magazines. Moving picture demonstrations were put on showing the happiness side of the nurse's life. Hospitals that had no trouble in obtaining students were wont to boast about it. There was considerable pride in recording record classes of students. We did a good deal of boasting when we had a class of 96. There were no protests at that time, and that isn't so very long ago. It takes time to get back to the other attitude. One point in Dr. Muenger's paper that will bring it back more quickly than anything else, from an instructional point of view, is his suggestion of collecting data concerning employment among the alumni of one's own school. We have been doing that. The figures, for the last two years, are tragic. Probably a similar story can be told from north to south and from east to west. The immediate solution is to cut down classes and do much along the lines that have been suggested here today. This is the most harmonious nursing session that I have ever attended. I wish I had something with which I could disturb it. Post-graduate work should be seriously taken into consideration. A year of postgraduate work in the hospital or university might be made a requisite to graduation. Any plan such as this should be safeguarded against its being used as a purely economic program without giving a compensatory value to the nurse. I disagree with certain suggestions that students be limited entirely to the employment absorability of the community. I think that there are a certain number who wish to take it up as an education, not necessarily as a vocation, though probably in the back of their minds they propose to have it as a backlog in case of adversity. I consider that medical education can fit unfitted medical students, in most cases, for almost any other vocation except the practice of medicine.

DR. E. P. LYON, Minneapolis: Nursing is the only profession that is left in the apprenticeship system. It has been said here today repeatedly that the hospital superintendent controls nursing education. I have to conclude that the whole system, with the changes that have been going on in all the professions relating to health, except nursing, has come to be educational institutions under the control of the professions concerned. Either that is wrong or else you are an anachronism and failure so far as educational advances are concerned.

DR. AUSTIN A. HAYDEN, Chicago: I wish to take exception to some of the things that Miss Eldredge said when she observed that any one, any nurse, implying any unsuccessful nurse, in hospital administration could go into private duty. I think that in the past the medical profession and the public have looked, and if the nurses are wise they will join these two groups in continuing to look, to the chief work of a nurse as in the sickroom. Only a small percentage of your members will ever be hospital administrators or organization women by profession. Why stress the importance of training and making way for them? Why not emphasize the duty on which most of you depend for a living, the care of the private patient? I hope nursing will always devote the majority of its thought and its time to that one particular thing. Much has been said about the overcrowding of nurses. Well, you knew it five years ago and the doctors knew it, but nothing was done about it. That is a condition that is observed in medicine all over the world, and the thing that is happening in medicine is happening in nursing. The better schools are refusing to overload their courses, and in many instances those who are refused are moving out into the less desirable hospital situations. The same is true in medical schools. From Columbia University I learned last night that out of a class of 325 excellently prepared medical applicants it was possible to accept, of their own graduates, only 35 for their medical schools. The rest sought entrance into other schools. It is high time that nursing, physicians and the public do something and in a drastic way, about the curtailment of the number of women who apply for nursing education.

SISTER GERALD, Chicago: I agree with what Dr. Hayden has said about the curtailment of the number of students entering schools of nursing. Nursing is not safeguarded as is the profession of medicine or many of the other professions. Better legislation is needed in the different states. There are states today where one year of high school or its equivalent is required for admission to a school of nursing. Again, a young woman who has been found unworthy of the noble profession of nursing and who has been asked to resign from a school of nursing may go out and don a white uniform and be employed in the home and in other offices or positions that rightly belong to our graduate registered nurses. There is nothing done about it. We hear that there are going to be laws enacted, but they are not enacted. There are hundreds of positions today being held by women who are not nurses, positions that properly belong to the nursing profession. It would help the unemployment situation very much if graduate nurses came into their own and if their proper positions were sufficiently protected. I agree that nurses should be educated in the most perfect manner possible, that they should not be sacrificed or exploited in any way. Why give them the proper education and training if they don't get the recognition that places them in their proper place, allowing others who are inferior in cultural background and in education and in mental ability and everything else to take their place? I hope some day to see the profession of nursing as well protected as doctors and lawyers and dentists.

MR. PAUL FESLER: I suggest that each hospital study its own situation and see just how it works out from an economic standpoint, keeping in mind that if there is to be a school it must meet a very high standard.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Bill Introduced.—H. 346 proposes to authorize the State Bridge Corporation to issue to licensed physicians annual passes to cross over the toll bridges controlled by the corporation at a charge not to exceed \$5.

Clinical Meeting.—The John A. Andrew Clinical Society opened its twenty-second annual clinic and sixteenth annual meeting, April 9, at the John A. Andrew Memorial Hospital, Tuskegee Institute. The session closes today, April 15. The society was organized in April, 1918, for the advancement of Negro physicians and for the study and treatment of morbid conditions affecting thousands of needy sufferers in this section of the South. Physicians who participated in the program include:

Henry E. Lee, Houston, Texas, Ovarian Tumors.
James M. Franklin, Prairie View, Texas, Spinal Anesthesia.
Walter G. Crump, New York, Diseases of the Upper Right Quadrant.
Henry R. Butler, Jr., Atlanta, Ga., Coronary Diseases.
Louis T. Wright, New York, Fractures of the Skull and Brain Injury.
Alexander Kaye, New York, Appendicitis.
Samuel Lubash, New York, The Prostate.
Ulysses G. Dailey, Chicago, Surgical Mortality and Factors for Its Reduction.
Walter L. Bruetsch, Indianapolis, Pathology and Treatment of Neurosyphilis.
Joseph A. Robinson, Darlington, S. C., Heart Problems of Our Group: Its Challenge to the General Practitioner.
Theodore K. Lawless, Chicago, Diagnosis of the Commoner Dermatoses.
Roscoe C. Giles, Chicago, Management of Fractures of the Spine.
Willard M. Lane, Washington, D. C., Appendicitis in the Female.
John H. Hale, Nashville, Carcinoma of the Sigmoid.
May E. Chinn, New York, Aschheim-Zondek Tests for Early Pregnancy.
William L. Funkhouser, Atlanta, Preventive Medicine As It Applies to Pediatrics.
Luther C. Fischer, Atlanta, Appendicitis.
Marion C. Pruitt, Atlanta, Terminal Bowel as Focus of Infection.
Garland Norman Adamson, Chicago, Hormone Therapy in Obstetrics and Gynecology.
Charles Waymond Reeves, Atlanta, Contributions of the Negro to Medical Sciences.

In addition to other papers, several clinics were held.

ARIZONA

State Medical Meeting at Tucson, April 20-22.—The annual meeting of the Arizona State Medical Association will be held at Tucson, April 20-22, with headquarters at the Santa Rita Hotel under the presidency of Dr. Clarence Gunter, Globe. Scientific meetings will be in the Scottish Rite Temple. The following physicians are on the program:

William G. Shultz, Tucson, Cinema Demonstration of Prostatic Resection.
Harold W. Rice, Morenci, gas gangrene.
Eugene A. Gatterdam, Jr., Phoenix, Oral Administration of Pollen Extract in Hay Fever Therapy.
William Warner Watkins, Phoenix, X-Ray Radiation of Acute Infections.
Harry A. Reese, Yuma, Tularemia.
Emile C. Houle, Nogales, Delayed Treatment of Sequelae of Diphtheria.
Reginald J. H. Stroud, Tempe, Report of the Committee on the Costs of Medical Care.
Louis C. B. Baldwin, Phoenix, Clinical Aspects of Essential Hypertension.
John W. Flinn, Prescott, Bone and Joint Tuberculosis.
Victor S. Randolph, Phoenix, Intrapleural Pneumolysis, with Special Reference to Bilateral Pneumothorax, in the Treatment of Tuberculosis.
Walter P. Sherrill, Phoenix, Tuberculosis from the Standpoint of the Pediatrician.
Henry L. Franklin, Phoenix, Refractive Errors in Their Relation to General Medicine.
Robert Alan Hicks, Tucson, Progress Chart for the Study of Pulmonary Tuberculosis as Elaborated at the Southern Pacific Sanatorium.
Howell S. Randolph, Phoenix, a motion picture on Mechanism of Electrocardiography and the Heart Beat.
Clara S. Webster, Tucson, subject not announced.

Speakers from out of the state will include Drs. James A. Dickson, Cleveland, on orthopedics; Albert Soiland, Los Angeles, diagnosis and treatment of cancer of the breast; Gershom J. Thompson, Rochester, Minn., prostatic resection in poor risk patients, and George Franklin Farman, Los Angeles, prostatitis. The Pima County Medical Society will act as host.

CALIFORNIA

Dr. Bloomfield Appointed Acting Dean.—Dr. Arthur L. Bloomfield, secretary and professor of medicine, Stanford University School of Medicine, San Francisco, has been acting dean of the school since the death of Dr. Henry S. Mehrtens.

History of Science Club.—The History of Science Club was recently organized at the University of California in Berkeley to increase the interest in the history of science which had been stimulated by the visits in 1930 and 1932 of Dr. and Mrs. Charles Singer from the University of London, England. Dr. Singer, lecturer in the history of medicine, has been lecturing at the University of California. The club is composed of faculty and graduate and undergraduate students.

State Board News.—Records of the California Board of Medical Examiners show that a smaller number of applications were filed and a smaller number of licenses were issued during 1932. Three revoked certificates were restored, while thirty-seven California physicians were cited to appear before the board for hearings on charges of misconduct and violation of the medical practice act. Eleven licenses were revoked by the board and thirteen physicians were placed on probation, while three cases were dismissed.

Committee on Physical Therapy.—The council of the California State Medical Association recently appointed a special committee on physical therapy to survey the present practice of physical therapy with reference to education and practice. A report is to be made at the next meeting of the state medical association. Members of the committee include Drs. John S. Hibben, chairman, Pasadena; Rodney F. Atsatt, Santa Barbara; Harry Leslie Langnecker, San Francisco; Charles L. Lowman, Los Angeles, and Howard C. Naffziger, San Francisco.

COLORADO

Bill Introduced.—S. 370 proposes to require all applicants for licenses to practice any form of the healing art, as a condition precedent to examination by their respective professional boards, to pass examinations in anatomy, physiology, chemistry, bacteriology and pathology, to be given by a board of basic science examiners, no member of which may be engaged in the practice of the healing art.

Health at Denver.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended April 1, indicate that the highest mortality rate (19.4) appeared for Denver, and the rate for the group of cities as a whole, 11.3. The mortality rate for Denver for the corresponding period last year was 15.1. and for the group of cities, 13.5. The annual rate for eighty-five cities for the thirteen weeks of 1933,

was 12.3, as against a rate of 12.7 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

Society News.—The proposed gift of the Agnes Memorial Sanatorium, Denver, to Colorado as a state tuberculosis sanatorium was discussed at a joint meeting, February 21, of the Colorado Tuberculosis Association, the Denver Sanatorium Association, the El Paso County Sanatorium Association and the Denver County Medical Society. Speakers at this meeting included Drs. Harry J. Corper and Frank B. Stephenson of Denver. Clarence Rufus Rorem, Ph.D., Chicago, was to be the guest of honor at the closing banquet.—The Clinical and Pathological Society was host to the Medical Society of the City and County of Denver, March 7; speakers included Drs. Casper F. Hegner on "Metastatic Carcinoma with X-Ray of Pelvis and Cranium," and John M. Foster, Jr., "Massive Hemothorax."—Dr. Isaac L. Gotthelf, Sagauche, was elected president of the San Luis Valley Medical Society at its recent annual meeting in Alamosa.

FLORIDA

Safety Campaign Shows Results.—The safety campaign, carried on by the Duval County Medical Association, Jacksonville, is credited with a decrease in automobile accidents in February, it is reported. In this month there were 6 per cent fewer automobile accidents than in February, 1932.

Hospital News.—The Florida Hospital Association held its fifth annual convention in Ocala, March 27. Dr. Bert W. Caldwell, executive secretary, American Hospital Association, Chicago, addressed the dinner meeting on "The Program of the American Hospital Association in Reference to Current Hospital Problems."

Funds for Free Vaccines Exhausted.—City health departments are confronted with the problem of supplying diphtheria, typhoid and smallpox vaccines, a recent report indicated. It has been the custom of the state board of health to provide local departments with antitoxins to be given free to the indigent, but funds for this purpose have been exhausted, it was announced.

Society News.—At a meeting of the Dade County Medical Society, Drs. Carleton Deederer, Miami, spoke on "Treatment of Complete Suppression of Urine, as in Bichloride Poisoning"; Jesse Raymond Graves, Miami, "Present Influenza Epidemic, with Discussion of Complications," and Percy L. Dodge, Miami, "Sensory Aphasia."—Dr. Rudolph W. Holmes, Chicago, addressed the Hillsborough County Medical Society, February 7, on cesarean section.

Memorial to Dr. Helms.—More than 100 friends of the late Dr. John S. Helms, Tampa, met, January 10, to organize a memorial association. Peter O. Knight, LL.B., was elected president; Dr. Henry Mason Smith, vice president, and Dr. Bundy Allen, secretary. The consensus was that the most suitable type of memorial would be a portrait of Dr. Helms in bronze to be placed in a public park. Dr. Helms died, July 24, 1932. He had served as a member of the House of Delegates of the American Medical Association, and was a past president of the Florida Medical Association and the Hillsborough County Medical Society.

IDAHO

Personal.—Dr. Joseph Fremstad, Burley, has been appointed physician of Cassia County; Dr. Charles B. Beymer, Burley, health officer, and Dr. Chester I. Sater, Malta, sanitary officer.—Dr. William R. Abbott, Ririe, has been appointed physician of Bonneville County.

ILLINOIS

Bill Introduced.—S. 380 proposes to authorize any court before which a personal injury action is pending to require the plaintiff, at the defendant's expense, to submit to a physical examination by one or more physicians, selected by the court.

Tumor Registry Established.—A centralized collection of records on malignant tumors will be available through the establishment of a tumor registry by the Peoria City Medical Society. Through the registry, all types of treatment will be followed in an effort to determine their value for future use. How tumors occur and how they are influenced by existing methods of treatment will be considered. Membership will be extended to any physician who registers a case. The activities of the registry will be guided by a board of nine members

according to *Peoria Medical News*, whose personnel will not be changed for five years, excluding changes made necessary by resignations, to preserve continuity. For the present, all records of complete histories will be kept in the laboratory of the St. Francis Hospital. A record of a patient's past treatment will be available to any physician requesting it. Each physician will follow up his own cases; for this purpose the registry will furnish him every six months a list of the cases he has registered. These records will be available for study to any member of the registry or of the medical society. Publication of papers on this material must be approved by the board, which is to meet often enough to keep in contact with the collection of material and will make an annual report to the medical society. The following physicians compose the first board: Fred H. Decker, Perry B. Goodwin, Harry B. Magee, Milton G. Bohrod, Hugh E. Cooper, Bransford L. Adelsberger, Harry A. Durkin, Clarence W. Magaret and Baxter Brown.

Chicago

Lectures on Tuberculosis.—Dr. Richard H. Jaffe, director, department of pathology, Cook County Hospital, opened the Theodore B. Sachs Lectures in Tuberculosis of the University of Illinois College of Medicine, April 3. Following are the titles of the lectures:

- April 3: Histopathology of Tuberculosis.
- April 5: Tuberculous Primary Complex.
- April 7: The Early Generalization.
- April 10: Isolated Pulmonary Tuberculosis: (a) The Incipient Lesion.
- April 12: (b) Progressive Pulmonary Tuberculosis.
- April 14: The Tuberculous Cavity and the Late Generalization.

Court Bans Unethical School Graduates.—Circuit Judge Thomas Taylor, Jr., rendered a decision, March 24, refusing to graduates of the Illinois College of Physicians and Surgeons the privilege of taking examinations to practice medicine in Illinois, according to the *Chicago Tribune*. The "college" is at 20 North Ashland Avenue, and its three incorporators doubled as officers, directors and students in their own classroom. The action was a mandamus suit brought by a graduate of the school to compel the state department of registration and education to give him an examination for a certificate to practice medicine. In the building in which the college is located are so-called medical organizations which ethical physicians refuse to recognize, it was stated. The three incorporators of the school, Omer C. Bader, Victor A. Piontkowski and Ewell B. Simpson, were said to be graduates of one of these organizations, called the College of Drugless Practitioners. Also in the building are the National College of Chiropractic and the Chicago General Health Service.

MAINE

Bill Enacted.—H. 1527 has become a law, prohibiting the dispensing or other distribution of veronal or barbitol, except on the written prescription of a physician, dentist or veterinarian.

MASSACHUSETTS

Dr. Opie Gives Cutter Lecture.—Dr. Eugene L. Opie, professor of pathology, Cornell University Medical College, New York, will deliver the Cutter Lecture on Preventive Medicine, April 17-18, at Harvard University Medical School, Boston. His subject will be "The Epidemiology of Tuberculosis."

Society News.—Drs. Jacob Kasanin and Rawser P. Crank, Howard, R. I., among others, discussed melanosis of the brain and Alzheimer's disease before the Boston Society of Psychiatry and Neurology, March 16.—At a meeting of the New England Physical Therapy Society in Boston, March 15, Drs. Dwight O'Hara, Boston, and Byron Sprague Price, New York, spoke on "Pneumococcus Lobar Pneumonia" and "Physical Treatment in Pneumonia," respectively.

MICHIGAN

Bills Introduced.—S. 106 proposes that applicants for licenses to practice any form of the healing art are not to be eligible for examination by their respective professional boards until the board of professional examiners, which this bill proposes to create, has issued them certificates of ability. Such certificates will be issued only to those applicants who are graduates of accredited high schools, have 30 semester hours of college credits in English (6 hours), biology (8 hours), chemistry (8 hours), and physics (8 hours), and who pass examinations to be given by the board in the subjects named. H. 398, to amend the medical practice act, proposes (1) to strike out that provision requiring the board of registration to be composed of five nonsectarian, two homeopathic, two eclectic, and one physio medical practitioners, and to provide only that the board be composed of ten licensed practitioners of

medicine; (2) to permit the board in its discretion to waive examining those applicants who are graduates of accredited medical colleges; (3) to permit the issuance of licenses by reciprocity only to those applicants who have resided in the state at least one year preceding the date of application and who have notified the board of their intention to apply for registration at least one year prior to applying. The board in its discretion may permit an applicant, who has notified the board of his intention to apply for a license by reciprocity, to practice until his application has been acted on. The board can rescind the license of any such licensee who does not maintain a legal residence in the state; (4) to permit the board to revoke or suspend the license of any licensee whom, after due notice and an opportunity to defend has been accorded, a majority of the board finds guilty of grossly unprofessional or dishonorable conduct; (5) to make it a felony, instead of a misdemeanor, for any licensee to be guilty of "unprofessional and dishonest conduct"; (6) to require licensees to register with the county clerk of each county in which they practice, and (7) to permit courts to enjoin the unlicensed practice of medicine or drugless healing.

MINNESOTA

Bill Introduced.—H. 1628 proposes to authorize the court in any criminal case in which the sanity of the defendant is at issue to appoint from one to three expert witnesses to examine and observe the defendant and to testify as the court's witness. The defendant and the state, however, may also call expert witnesses of their own.

Personal.—Dr. John W. Bell, who has practiced in Minneapolis since 1881, observed his eightieth birthday, March 18. He is a former member of the faculty of the University of Minnesota School of Medicine, and a former president of the Hennepin County Medical Society, the state medical association and the Minnesota Academy of Medicine.—Dr. Patrick O'Hair celebrated his eighty-fifth birthday, February 25, at Waverly, where he has been in practice for fifty-two years.—Dr. and Mrs. De Costa Rhines, Caledonia, recently celebrated their golden wedding anniversary.

NEBRASKA

Graduate Course at University of Nebraska.—The departments of medicine, neuropsychiatry and dermatology of the University of Nebraska College of Medicine, Omaha, will offer a graduate course, May 15-20, the week preceding the annual session of the Nebraska State Medical Association in Omaha. The fee for the course will be \$10 and the number of students limited to thirty.

Society News.—Drs. Arthur D. Dunn and Frederick W. Niehaus, among others, addressed the Omaha-Douglas County Medical Society, March 28, on "Secretary (Renal) Anuria Treated by Decapsulation" and "Coronary Circulation in Health and Disease," respectively. The March 14 meeting was devoted to discussion of the medical economic problem.—Drs. Joseph A. Weinberg, Adolph Sachs and William H. Stokes, Omaha, presented a program before the Lancaster County Medical Society, April 4, speaking on "Lobectomy in Bronchiectasis," "Agranulopenia" and "Retinal Vessels and the Fundus in Arteriosclerosis, Hypertension and Nephritis," respectively.

NEVADA

Annual Registration Due May 1.—All practitioners of medicine and surgery holding licenses to practice in Nevada are required by law to be registered annually on or before May 1, with the treasurer of the board of medical examiners, and at that time to pay a fee of \$2. Failure to pay operates to forfeit a licensee's right to practice medicine, and his license to practice can be reinstated thereafter only on the payment of a \$10 penalty.

NEW JERSEY

Bill Introduced.—S. 312, to amend the medical practice act, proposes (1) to permit a person holding a limited license to practice to be examined for a license to practice medicine and surgery if he (a) has completed two years of college work, including courses in French or German, chemistry, physics and biology, (b) has received a degree of doctor of medicine from a reputable medical college, and (c) is of good moral character; and (2) eliminates that provision of the act which authorizes the licensing by reciprocity of diplomates of the National Board of Medical Examiners.

Dedication of Research Laboratory.—Sir Henry Dale, director of the National Institute for Medical Research of England, will deliver the dedicatory address at the opening of a new research laboratory at the plant of Merck and Com-

pany, Rahway, N. J., April 25. Other guests of honor at the dedication will be Mr. Lammot du Pont, Wilmington, Del., president of the Manufacturing Chemists' Association; Josiah K. Lilly, chairman of Eli Lilly and Company, Indianapolis, and Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service. The State of New Jersey will be represented by Gov. Harry Moore.

NEW YORK

Bills Passed.—S. 1794 and S. 1795 have passed the senate, proposing to amend the workmen's compensation act by adding to the list of compensable occupational diseases: "poisoning by chlorine or its compounds or its sequelae; poisoning by cyanogen or any cyanide or its sequelae."

State Medical Election.—Dr. Arthur J. Bedell, Albany, was chosen president-elect of the Medical Society of the State of New York and Dr. Frederick H. Flaherty, Syracuse, was installed as president at the annual meeting in New York. Other officers elected are Drs. Ralph R. Fitch, Rochester, and Charles D. Kline, Nyack, vice presidents; Samuel J. Kopetzky, New York, speaker, and Floyd S. Winslow, Rochester, vice speaker.

New York City

Lectures on Heart Disease.—Four lectures for laymen on heart disease as a medical and social problem were given during March under the auspices of the heart committee of the New York Tuberculosis and Health Association. Speakers for the series, which was presented Tuesday afternoons, were Drs. Ernst P. Boas, on "The Problem of Heart Disease"; Irving R. Roth, "Rheumatic Heart Disease" and Edwin P. Maynard, Jr., "Heart Disease in Middle Age" and Miss Gordon Hamilton of the New York School of Social Work, "Social Factors in Heart Disease."

Columbia Offers Clinical Courses.—Columbia University College of Physicians and Surgeons will give clinical courses for graduates in medicine at St. Luke's Hospital, April 17-June 10. Classes will meet for weekly periods of two and one-half hours each. Subjects to be offered are clinical diabetes, cardiology, thyroid disease, allergy, radiographic diagnosis and arthritis. The following members of the hospital staff will be in charge of the instruction: Drs. Henry S. Patterson, Lewis F. Frissell, George M. Goodwin, Frank Warner Bishop, John J. Honan Keating, Waldo B. Farnum, Albert C. Herring, Joseph Hajek, James Ralph Scott, William Sturgis Thomas and Eric James Ryan.

Gifts to University.—Gifts and bequests totaling \$124,782.84 have been received by New York University within the past three months, it was announced, March 12. Among large gifts for medical purposes are the following:

Sundry donors through Mrs. Anne Tiffany, for the Cardiac Clinic Endowment Fund, \$22,500.
Carnegie Corporation, for support of the medical school, \$17,500.
Lucius N. Littauer, for studies on pneumonia under Dr. William H. Park, \$2,500.
Commonwealth Fund, for research on pneumonia serum, \$2,166.66.
Josiah Macy, Jr., Foundation, for study of chorea, \$2,000.
Mead Johnson Company, for vitamin research, \$1,600.
New York Foundation, for research on infantile paralysis under Dr. Park, \$1,000.
National Research Council, for study of proteins and amino acids under Dr. Bret Ratner, \$500; and for investigations of function of the kidney under Prof. Robert Chambers, \$500.

OHIO

Bill Enacted.—H. 241 has become a law, amending the dental practice act by (1) adding to the list of subjects in which applicants for licenses are examined diagnosis, preventive dentistry and such other subjects as the board of dental examiners may deem necessary, and (2) permitting licenses to be revoked if a licentiate (a) wilfully publishes grossly false, fraudulent or misleading statements of his skill or methods of treatment or practice or (b) is found guilty of employing an unlicensed person to perform dental operations.

PENNSYLVANIA

Bills Introduced.—S. 745 proposes to repeal the laws regulating the distribution and possession of narcotic drugs and to enact the uniform narcotic drug act. A. 1762 proposes to create a board of naturopathic education, examination and licensure and to regulate the practice of naturopathy. A. 1742 proposes to create a chiropractic board of examination and licensure and to regulate the practice of chiropractic. Chiropractic is defined as "the adjustment by hand of any and all articulations of the spinal column."

Society News.—Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, will be the speaker at the annual dinner of the Allegheny County Medical Society, Pittsburgh, April 18.

His subject will be "Changes in the Nature of Medical Practice." Dr. George P. Muller, professor of clinical surgery, University of Pennsylvania School of Medicine, Philadelphia, will conduct a clinic in the afternoon preceding the dinner. —Dr. James L. Cornely, Phillipsburg, addressed the Clearfield County Medical Society, Clearfield, March 16, on "Advances of Medicine in 1932." —Dr. Eldridge L. Eliason, Philadelphia, addressed the Erie County Medical Society in March, on surgery in diabetes. —Drs. Arthur C. Morgan, Philadelphia, and Vincent Pisula, Everson, were speakers at a meeting of the Fayette County Medical Society, Uniontown, April 6, on "Medical Economics—The Committee on Costs of Medical Care" and "The Profit and Loss Accounts of Modern Medicine," respectively. —Charles A. Gill, superintendent of the Hospital of the Protestant Episcopal Church, Philadelphia, was chosen president-elect of the Pennsylvania Hospital Association at the annual meeting in Philadelphia, March 22. Among speakers at the meeting were Drs. Sigismund S. Goldwater, New York, on group practice in hospitals and Donald C. Smelzer, Philadelphia, on state provision for the tuberculous.

Philadelphia

Award to Dr. Flick.—The tenth annual Strittmatter Award of the Philadelphia County Medical Society, was presented to Dr. Lawrence F. Flick, March 22, in recognition of his work on the pathology and treatment of tuberculosis during fifty-four years of practice. Dr. Flick was unable to be present because of illness, and the medal was accepted by his son, Dr. John B. Flick, together with an illumined scroll bearing the citation. Dr. Charles F. Nassau, president of the society, presided and Dr. Basil R. Beltran, chairman of the award committee, made the presentation. Dr. Isadore Strittmatter, founder of the award, reviewed Dr. Flick's career, which has included rôles in every important antituberculosis movement in Pennsylvania, it was said. He was medical director of Henry Phipps Institute for the Study of Tuberculosis before it was affiliated with the University of Pennsylvania, having given up that position because of his health. Born in Cambria County, Dr. Flick was graduated from Jefferson Medical College in 1879. He has received honorary degrees from his alma mater and from the Catholic University of America, Villanova College and St. Vincent College. In 1920 he received the Laetere Medal, awarded annually by Notre Dame University. Presentation of the award to Dr. Flick was made jointly with the delivery of the third annual Da Costa Oration. Dr. Walter E. Dandy, adjunct professor of neurologic surgery, Johns Hopkins University School of Medicine, Baltimore, delivered the address on "Diagnosis and Treatment of Tumors of the Brain." Preceding the oration Dr. Dandy was a guest at a banquet celebrating both events. The Da Costa Foundation for graduate teaching, which sponsors the annual orations, was established April 30, 1930, in honor of Dr. J. Chalmers Da Costa, for many years Samuel D. Gross professor of surgery at Jefferson Medical College. Dr. Da Costa is now an invalid.

SOUTH CAROLINA

Bill Introduced.—S. 770 proposes to repeal the laws regulating the possession and distribution of narcotic drugs and to enact the uniform narcotic drug act.

Bill Passed.—S. 435, to repeal an act approved April 6, 1932, requiring that any poison offered for sale, resembling commonly used foodstuffs, be discolored so as to be readily distinguished from any food by casual glance, has passed the senate and the house.

State Medical Meeting at Spartanburg.—The eighty-fifth annual session of the South Carolina Medical Association will be held in Spartanburg, April 18-20, under the presidency of Dr. James R. Young, Anderson, with headquarters at the Cleveland Hotel. Guest speakers will be Drs. Olin West, Chicago, Secretary and General Manager, American Medical Association; William D. Haggard, Nashville, Tenn., and Paul P. McCain, Sanatorium, N. C. Among South Carolina physicians who will present papers are:

Dr. Floyd O. Rodgers, Columbia, Recent Advances in X-Ray as an Aid in Diagnosis.
Dr. James Heyward Gibbs, Columbia, The Anemias.
Dr. Wesley G. Byerly, State Park, Childhood Tuberculosis.
Dr. Benjamin C. Bishop, Greenville, Relation of Focal Infection to Chronic Ill Health.
Dr. Roger G. Doughty, Columbia, Congenital Hydrocephalus.
Dr. Archie E. Baker, Jr., Charleston, Postoperative Atelectasis.

A symposium on traumatic surgery will be presented by Drs. Frank R. Wrenn, Anderson; Archibald J. Buist, Charleston; James C. McLeod, Florence, and Charles O. Bates, Greenville. Dr. Edgar A. Hines, Jr., now of Rochester, Minn., will give a paper on essential hypertension. Clinics are planned in addition to the scientific program and a public health meeting will

be held Wednesday evening, April 19. The South Carolina Public Health Association will hold its annual meeting, April 18, with Dr. William A. Mulherin, Augusta, Ga., as guest speaker, on "Preventive Pediatrics." The president's reception and ball will be given Thursday evening, April 20.

TENNESSEE

Bills Introduced.—S. 632 proposes to accord to physicians and dentists treating persons injured through the fault of other persons liens on any judgments, claims, compromises or settlements accruing to the injured persons by reason of their injuries. H. 1020 proposes to authorize the board of medical examiners to license without examination any person who has attended a medical college for at least two years and who has practiced medicine in conjunction with a licensed practitioner for at least five years. Such a licentiate, however, may practice only in counties of not less than 16,200 population nor more than 16,300 population.

WEST VIRGINIA

Portrait Unveiled.—A portrait of Dr. John Nathan Simpson, dean of West Virginia University School of Medicine since he organized it in 1902, was recently presented to the school by the class of 1932 and other alumni of the medical school. Dr. Simpson was professor of physiology at the school from 1902 to 1920, since which time he has been professor of medicine. He was director of the hygiene laboratory of the state department of health from 1913 to 1917. He received the degree of doctor of medicine from Johns Hopkins University School of Medicine in 1902.

WISCONSIN

Physician in Congress.—Dr. Charles W. Henney, Portage, is a member of the Seventy-Third Congress. Dr. Henney was graduated from Northwestern University Medical School, Chicago, in 1910 and entered practice in Portage in 1912. He served as president of the Columbia County Medical Society from 1928 to 1930. This is said to be his first activity in politics.

Plans for Care of the Indigent.—The Rock County Board of Supervisors has adopted a plan for care of the indigent in which the patient may select his own physician in operative and confinement cases and in overflow cases which cannot be handled by the county physicians. Physicians who care for county patients are to render bills, which will be audited by a committee of physicians and approved by the county trustees. A fee schedule adopted includes the following: tonsil operations, \$12 to \$15, depending on hospitalization; major operations, \$30; obstetric cases, \$12.50 outside the hospital, \$10 inside; office consultation, 50 cents; city calls, \$1; major fractures, \$25 to \$35, excluding roentgenograms.—Dane County has recently installed a dispensary at St. Mary's Hospital, Madison, at which clinical examinations are made free by members of the county medical society, who alternate on duty. Interns and nurses are on duty at all times at the clinic. In addition, necessary house calls will be made by family physicians of indigent persons, the expenses to be paid by the county. Surgical and hospital cases will continue to be handled as before, through the Wisconsin General Hospital.—In Outagamie County a plan was adopted whereby indigent persons are cared for by their family physicians on written authorization from the public relief commission. Statements of the services given are presented to a special auditing committee, which determines the charges considered fair. This auditing committee is composed of members of the county medical society and the relief commission. Doubtful cases are referred to a consultation committee of the medical society.

GENERAL

Occupational Fatalities Decline.—The lowest occupational fatality rate in twenty-one years' experience of the Metropolitan Life Insurance Company, 22.9 per hundred thousand, was recorded among its industrial policyholders for 1932, the *Statistical Bulletin* reports. This is considered a direct result of the decrease of activity because of unemployment in the hazardous industries. In 1931 the rate was 27.3 and in 1929, the last year of full employment, 35.9. The rate for traumatism by falls, the leading cause of industrial accidental deaths, was 3.9, a decline of 18.8 per cent for the year. Occupational automobile accidents were second in importance; traumatism by machines, third. Steam railroad accidents, formerly the leading cause of industrial accidents, were fifth in 1932.

Child Health Day.—The American Child Health Association has issued a pamphlet of suggestions for carrying out "Child Health Day" this year for state and county chairmen, community committees, county and city health departments, county medical and dental societies, and county, city and town school superintendents. A joint resolution of the Senate and House of Representatives designating May 1 as Child Health Day was adopted, May 14, 1928, in order to "awaken the people of our country to the fundamental necessity of a year-round program looking toward the protection and the development of the physical and the mental health of our children." In 1929, the Conference of State and Provincial Health Authorities of North America appointed a committee on National Child Health Day. In 1932 this committee agreed to assume full responsibility for the annual conduct of Child Health Day as directed by the conference of health authorities and to accept the continuing assistance of the American Child Health Association in the observance of May Day.

Society News.—The American committee of the International Pediatric Congress, and the American Academy of Pediatrics are arranging a group trip to the international congress in London, July 20-23, on the S. S. *Laconia*. The group will leave New York, July 7, arriving in Liverpool, July 16. Mr. Walter C. Gevers, American Express Company, 1010 Locust Street, St. Louis, is in charge of the American end of the trip.—Officers of the American Heart Association for the coming year are Drs. Stewart R. Roberts, Atlanta, Ga., president; John H. Wyckoff, Jr., New York, vice president; William D. Stroud, Philadelphia, and Harrold A. Bachmann, Chicago, treasurer. The annual meeting of the association was held in New York, February 6. The ninth annual scientific session will be held in Milwaukee, June 13.—The American Association of Railway Surgeons will hold its annual meeting in Chicago, August 10-12, instead of in November as previously announced.—Dr. Edward H. Cary, Dallas, Texas, President, American Medical Association, addressed the twenty-eighth annual convention of the Tri-State Medical Society of Louisiana, Arkansas and Texas, in Marshall, Texas, March 16, on socialization of medicine. Dr. Vesse R. Hurst, Longview, Texas, was elected president; Drs. Richard G. Granberry, Marshall, John D. Young, Shreveport, La., and Albert H. Mann, Texarkana, Ark., were chosen vice presidents, and Dr. George Patrick Quinn, Shreveport, was reelected secretary.—Dr. John O. McReynolds, Dallas, was elected president of the Pan American Medical Association at the recent meeting in Dallas. The next congress will be held on board a steamship which would visit various South American countries, starting from New York.—The Association for the Study of Allergy will hold its annual meeting in Milwaukee, June 12-13, at the Hotel Schroeder. Dr. Warren T. Vaughan, Richmond, Va., is secretary.—The twelfth annual session of the International Society for Crippled Children will be held in Wichita, Kan., April 16-19. Speakers will include Drs. Edward H. Cary, Dallas, Texas, President, American Medical Association; John P. Lord, Omaha, and Edmund V. Cowdry, Ph.D., St. Louis.

FOREIGN

Twenty-Fifth Anniversary of German Journal.—The *Zeitschrift für Kreislaufforschung*, a German publication concerned with diseases of the circulatory system, began its twenty-fifth year with the January issue. The journal has been the official publication of the German Society for Circulatory Research since the organization of the society in 1928.

Congress on Military Medicine.—The seventh International Congress on Military Medicine and Pharmacy will be held in Madrid, May 29-June 4. Subjects to be discussed are: sanitary organization of a nation in case of war and application of the regulations of the new convention at Geneva; preventive vaccination of armies; treatment of surgical emergencies at the front; tinned foods as rations, and comparative study of the organization in the land, sea and air services. Following the congress the third session of the International Bureau of Documentation of Military Medicine will be held.

Personal.—Sir Edward A. Sharpey-Schäfer, professor of physiology at Edinburgh University, Scotland, since 1899, will retire at the end of the current academic year, according to the *Medical Press and Circular*. Sir Edward, now 82 years old, has received many honorary degrees and medals from scientific societies. He was general secretary of the British Association from 1895 to 1900 and president in 1912 and is now president of the Royal Society of Edinburgh. He is widely known as the originator of the Schäfer prone pressure method of artificial respiration.—Dr. Grafton Eliot Smith, professor of anatomy in University College, London, has been appointed Fullerian professor of physiology at the Royal Institution to succeed Prof. John B. S. Haldane.

Cholera Last Summer in China.—An epidemic of cholera in China during the summer of 1932 attacked twenty-one provinces and 303 large cities. Although accurate statistics are not obtainable because China's means of collecting such information are inadequate, the Central Health Administration in Nanking estimated that 100,000 cases had been reported, with about 34,000 deaths, according to the *Chinese Medical Journal*. The epidemic was discovered in Shanghai in April and lasted till October, 4,296 cases having occurred in that city, with 318 deaths, a fatality rate of 7 per cent. As much higher death rates were reported in other cities, it was believed that the preparedness of health authorities in Shanghai, notably the use of special cholera hospitals, was responsible for the smaller number of deaths there. It was said that more than a million vaccinations were performed in the city between April and September. At Nanking the case fatality rate was reported to be 24.8 per cent (1,555 cases, with 386 deaths); in Canton, 35.3 per cent (1,093 cases with 386 deaths); in Amoy, 46 per cent (1,614 cases, with 745 deaths) and in Peiping, 79.3 per cent (493 cases with 391 deaths).

Government Services

Reduction in Veterans' Benefits

Regulations governing reductions in veterans' benefits under the new economy law were promulgated by President Roosevelt, March 31, to go into effect July 1. The regulations authorize hospital or domiciliary care, including medical treatment, for veterans suffering with injuries or diseases incurred or aggravated during war service and, with certain limitations, for veterans with non-service-connected disabilities that are permanent.

Veterans of the latter class are entitled to these benefits only if they have permanent disabilities, tuberculous or psychiatric ailments that prevent them from earning a living, if they served ninety days or more and if they have no adequate means of support. It is further provided that the pensions of veterans with no dependents who are thus maintained by the government shall not exceed \$15 a month in the case of service-connected disabilities and \$6 a month in non-service-connected cases. Under the World War veterans' act, veterans were entitled to hospitalization and medical care for any non-service disability so long as government facilities permitted.

Medical, surgical and dental services to ambulatory cases are restricted by another regulation to honorably discharged veterans of any war, suffering from diseases or injuries incurred or aggravated in line of duty while in active service.

Payments for disabilities incurred in war service are reduced 20 per cent under the new law. Veterans disabled in service other than war-time enlistments will receive pensions on a lower scale than those with injuries or diseases acquired in time of war. Pensions on a still lower scale are to be paid to veterans with total and permanent disabilities not incurred in service if such disabilities were not the result of misconduct and if the veterans were in service at least ninety days. No pensions are to be paid for disabilities not the result of service if the individual's income exceeds \$1,000 for a single man or \$2,500 for a man who is married or who has minor children. Spanish-American War veterans over 62 years old are entitled to \$6 monthly for less than permanent total disability. Maximum payments for the three main classes of veterans entitled to pensions are \$80, \$30 and \$20, respectively, except in special cases, such as loss of sight.

Emergency officers' retirement pay will henceforth be granted only to those whose disabilities resulted directly from war service and only if the disability has been rated previously as much as 30 per cent.

In the reorganization of the pension system, a new rating schedule was set up, by which only five rates of disability will be recognized: 10, 25, 50, 75 and 100 per cent. Heretofore the rating schedules have been from 10 to 100 per cent, with 1 per cent intervals.

The new program, by which veterans of all wars are placed on the same basis, goes into effect July 1 but is applicable immediately to all new claims. It is estimated that these reductions will accomplish savings to the government of approximately \$400,000,000. Unofficial estimates placed the number of veterans who would be stricken from the rolls as high as 450,000. The veterans' administrator is directed to make a study to determine whether there are classes of persons who should be specifically provided for and to report before July 1. The new regulations may be modified at any time within the next two years if experience shows that changes are desirable.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 18, 1933.

The Treatment of Acute Appendicitis

In a previous letter, a discussion at the Royal Society of Medicine on the treatment of acute appendicitis was reported. The leading surgeons of the day were unable to agree as to whether operation should be performed in every case. The Fellowship of Medicine and Postgraduate Association has now held a debate on the same subject in which the leading abdominal surgeons took part. Lord Moynihan was in the chair and two surgeons had been selected to lead in support of the motion and two to lead in opposition. Mr. R. M. Vick of St. Bartholomew's Hospital moved "That in every case of acute appendicitis immediate operation is indicated." He said that operation should be performed at once in all cases in which the diagnosis had been made as certainly as was humanly possible and the condition had not subsided by the time the surgeon arrived. But doubt had again arisen because of the universal fear of operation and because not all operations were done by surgeons of experience. The mortality of appendicitis was rising, owing to the pernicious revival of expectant treatment. Within forty-eight hours the operation was always successful. But he would go further and advise operation on every inflamed appendix. What applied to adults applied a hundredfold to children. There would be no great danger and some sense in waiting if one could know what was happening, but that was impossible.

Mr. Zachary Cope opposed the motion, particularly the words "immediate" and "in every case." There were cases in which immediate operation would be disastrous. He agreed as to operation in cases in which perforation had not taken place, in cases in which there was doubt about perforation, in cases of well formed abscess, and in most children. But he did not operate in advanced peritonitis, in cases of well formed lump not getting worse, or on patients in bad general condition, in whom recuperative treatment, such as saline infusion, might make operation safe after twelve hours.

Mr. W. H. Ogilvie of Guy's Hospital, though supporting the motion, felt almost inclined to agree with Mr. Cope. There were cases in which immediate operation was unwise, but he doubted whether these were "acute"; they were subsiding when the surgeon saw them. Nor was operation advisable in bad surroundings. But he felt justified in withholding operation in only 1 or 2 per cent. Experience had impressed him with the fallibility of human judgment. With exactly the same history and signs, the appendix might be found distended with pus and about to burst, gangrenous and not distended, or apparently healthy with a little inflammation inside. Nor could he forecast what was going to happen. The real crux was the third-to-fifth day case with rising temperature and pulse. He confessed that he lacked the courage to wait. At the beginning the risks could be foretold, but as time passed the gamble became greater.

Mr. R. J. McNeill Love of Royal Northern Hospital divided the cases into four groups. All agreed that early cases demanded operation and that subsiding ones had better be left alone. The third group was that complicated by general peritonitis. The fourth group was the one needing careful consideration. The patient was seen about forty-eight hours after onset and showed some rise of temperature and pulse, local rigidity and tenderness by rectum. Operation was difficult, drainage was usually necessary, and local peritonitis might become general. On the fifth day the patient was in a negative phase of resistance and the operative mortality was about 5 per cent. Complications were encouraged by untimely operation.

Expectant treatment must be rigorously enforced—the four F's: Fowler's position, fluids only, fomentation and a four-hourly chart. Only water must be given by the mouth, and this did not mean beef tea or custard. Children must not be treated expectantly, for they had usually been given purgatives. The inflammation might subside in from 50 to 70 per cent of cases and a clean operation be performed later. An abscess might form in 25 per cent.

In closing, Lord Moynihan said that the essential point in the debate had been entirely omitted: the aperient treatment. Patients never died of appendicitis; they died of its treatment. All acute appendicitis was obstructive, and if no aperient was given no case would ever become really active. He had never seen a gangrenous perforated appendix in which an aperient was not the cause. No danger would ensue from expectant treatment if aperients were withheld and if nothing whatever—particularly water—was given by mouth. A single drop of water caused intense writhing activity of the ileocecal valve. If the case was seen early there could be no question that operation was the best treatment, and no patient ought to be lost. The question could not be answered with an absolute affirmative or negative, but only by the exercise of clinical sagacity. Only in children was the greatest expert apt to be at fault; no child should be left with his appendix for half an hour. Whatever the surgeon felt about prognosis, he must without exception operate if an aperient had been given.

The motion was carried by the small majority of 54 votes to 49. Thus the same disagreement was revealed as in the previous discussion at the Royal Society of Medicine.

Impurities in London Air

The report on atmospheric pollution, issued by the department of scientific and industrial research, shows that in spite of regulations for smoke abatement there has been little improvement in the London air in the last ten years. There is still enough smoke produced to cause a dense fog under certain atmospheric conditions. During the year 1921-1922 the average deposit of total solids over London was 284 tons per square mile, which included 25 tons of sulphates. During the current year the average has been 281 tons, which includes 41 tons of sulphates. The deposit of tar, which has gone down from 7.3 tons per square mile to 5.5 tons, is still nearly three and one-half times greater than the average for the last five years. It is suggested that the high tar deposit is due to some special pollution from domestic smoke.

The Dangers of Cheap Enamel Ware

Three outbreaks of antimony poisoning due to the use of cheap enameled receptacles are the subject of a report by the ministry of health. Antimony oxide is widely used in place of tin oxide as an opacifying agent in the enameling of hardware, on account of its comparative cheapness. The antimony can be dissolved by acids, and in all the outbreaks this took place in the preparation of lemonade. The first was at Newcastle-on-Tyne in the summer of 1928, when a local firm decided to provide cooling drinks for its employees during hot weather. The drink was made from "lemonade crystals" in white enameled buckets, in which it was allowed to stand over night. Tartaric acid in the "crystals" dissolved the enamel and presumably antimony and potassium tartrate was formed. About seventy employees took the drink and nearly all became speedily ill. The symptoms were so severe that fifty-six were taken by ambulance to the infirmary. A tumblerful of the drink was found to contain $1\frac{1}{2}$ grains calculated as antimony and potassium tartrate. The second outbreak was at Folkestone in 1929. At a social gathering of 120 people the refreshments included lemonade made from sliced fresh lemons, prepared in large white enameled iron jugs. In about half an hour twenty-five or thirty persons were sick. The lemonade was found to con-

tain antimony and the enamel of the jugs 9 per cent of antimony oxide. The jugs when sold bore labels stating: "We guarantee all articles to be perfectly safe and free from any injurious substances." This outbreak showed that the natural citric acid of fresh lemons could also dissolve a dangerous amount of antimony. The third outbreak occurred in December, 1932, in a large London hospital. At the nurses' Christmas dinner sixty-five out of seventy were seized with acute vomiting, followed by collapse in several cases. The cause was found to be lemonade prepared from fresh fruit in white enameled iron jugs. The report concludes that, as the use of antimony in place of tin has become common, the public should be warned that enameled vessels should not be used for the preparation of food or drink.

Bicentenary of the Discoverer of Oxygen

The Royal Society has celebrated the bicentenary of the birth of Dr. Joseph Priestley, scientist, philosopher and unitarian divine, who discovered oxygen. The guests at the reception included descendants of Priestley. The son of a yeoman farmer, he was trained for the ministry, which he entered. He became famous as a champion of civil and religious liberty and also cultivated science, particularly chemistry and electricity. He invented the process for the production of aerated waters and in 1774 discovered oxygen by concentrating the sun's rays with a lens on mercuric oxide and other chemicals. He wrote: "The most remarkable of all the kinds of air that I have produced is one that is five or six times better than the common air for the purpose of respiration." The credit due to Priestley for this epoch-making discovery in chemistry, which is fundamental in physiology and of great practical importance in medicine, is increased by the fact that he had no scientific training. Theology was his original province. Bentham took from him the phrase "the greatest happiness of the greatest number." In 1781 his house in Birmingham was burned down by a mob and his library and scientific apparatus destroyed, because of his sympathies with the French revolution. He found refuge in London, where he was a minister for a time. In 1794 he went to the United States, where he died in 1804. His dreams of the value of oxygen have been amply fulfilled. During 1930, 7,000 million cubic feet was supplied in cylinders alone throughout Europe and North America.

The Typhoid Carrier

The medical research council has published an important report on chronic typhoid carriers and their treatment, by Prof. C. H. Browning, assisted by Drs. Coulthard, Cruickshank, Guthrie and Smith. Typhoid and paratyphoid A and B are at present responsible only for a small part of the morbidity and mortality in Great Britain. The microbes are still widely prevalent, however, as is shown by their ready detection in town sewage. With favorable opportunities there is still the danger of epidemics. There are parts of the country from which these diseases are never wholly absent. The evidence, the council states, is overwhelming that human beings constitute the sole source of the specific bacteria and that chronic carriers form an important part of this supply. Professor Browning bases his conclusions on extensive observation. He says that few carriers become cured spontaneously and that existing arrangements for dealing with them are inadequate. The results of medical treatment have been disappointing. Surgical measures have proved satisfactory where the seat of infection could be dealt with. In 75 per cent of the cases, removal of the gallbladder has effected a cure, but the number of patients operated on is small. Professor Browning urges that any population exposed to infection should be protected as far as possible by antityphoid vaccination. But extensive vaccination of a community does not obviate the necessity for the detection and treatment of carriers.

PARIS

(From Our Regular Correspondent)

March 1, 1933.

Case of Rocky Mountain Spotted Fever in Paris

Considerable stir was produced in Paris when it was learned that Dr. Brumpt, professor of parasitology at the Faculté de médecine, had contracted in his laboratory Rocky Mountain spotted fever. His condition occasioned great anxiety when it was announced that the mortality in this disease ranged around 60 per cent. Professor Brumpt had been frequently charged with scientific missions in foreign countries. He had studied yellow fever in Senegal, French West Africa, and trypanosomiasis at Gabon, French Equatorial Africa, without becoming infected. Last year, he started out on a trip to Mexico, where he was to meet Professor Roger. He traveled through the United States to study Rocky Mountain spotted fever and its relation to exanthematous typhus. He decided to be vaccinated against spotted fever, but the first injection produced such serious reactions that he was obliged to dispense with the second injection. He nevertheless insisted on collecting some ticks (*Dermacentor andersoni*) to take back to Paris. On returning home, in November, he permitted guinea-pigs to be bitten by the parasites he had brought. The ticks being enclosed in a tube, he felt that he was fully protected. On Sunday, February 5, he performed a necropsy on an animal he had inoculated with Rocky Mountain spotted fever, and he must have accidentally wounded himself slightly. Eight days later he developed headache, lassitude and severe pains, and delirium, which prevented his attendants from learning how he had become infected. It was difficult, therefore, to establish a diagnosis, as no previous case of this disease had been observed in France. February 14, the patient was transferred to the Hôpital Pasteur, where three doses of typhus serum from convalescents were injected, the serums having been procured by airplane from the Institut Pasteur in Tunis, from Casablanca, and from the hygienic institute in Warsaw. It was thought that this weak serum of a disease closely resembling that of the patient might be beneficial. Possibly as the result of this medication, the patient began to improve. The delirium disappeared, and the temperature steadily declined. At present, Professor Lemierre, who is in charge of the treatment, thinks that the crisis has passed and that the patient will soon be convalescent. The students of the Faculté de médecine became excited when it was noised about that the vial containing the ticks had been carelessly broken by a laboratory assistant, that the ticks had been scattered over the laboratory, and that Professor Brumpt had been bitten. The students refused to return to the building until all the vials containing the ticks had been destroyed and the guinea-pigs that had been inoculated had been killed. The daily press announced to the public that Rocky Mountain spotted fever could not spread in France by reason of the climatic conditions, and while this argument may have had little value, it calmed the public mind.

Site of Negri Bodies in Rabies

Mr. Nicolau and Madame Kopcioniska presented recently to the Société de biologie the results of research which established the sites in the brain where the Negri bodies in rabies become localized. It has been assumed for a long time that that point is at the level of the cornu ammonis. The authors employed a strain derived from rabid dogs of Morocco, and another virulent strain derived from a Rumanian wolf, a strain the evolution of which required only from three to five days and which was said to furnish no Negri bodies. With these strains, the authors found Negri bodies in great abundance in the basal optic nucleus, which appeared to be the preferred site of the virus.

The Cost of Tuberculosis to France

Dr. Georges Brouardel and Mr. Jacques Arnaud sought to evaluate what tuberculosis costs France every year. The official statistics show 90,000 deaths annually. Tuberculosis attacks chiefly men between 20 and 55 and women between the ages of 16 and 35, at the time of their best economic production. One commonly evaluates the morbidity at a figure four or five times as great as that of the mortality. Brouardel and Arnaud, calculating the number of years of work lost and taking as the financial equivalent of a year's work 10,000 francs (\$400) for men and 6,000 francs (\$240) for women, estimate that the total financial loss each year is 15,000,000,000 francs (\$600,000,000). These figures caused Mr. Brouardel to recommend the general introduction of preventive inoculation with BCG vaccine.

Deaths

The death of Dr. Jean Hutinel, physician to the hôpitaux de Paris and associate professor at the Faculté de médecine, from staphylococcal septicemia, at the age of 42, is announced. He was the son of Professor Hutinel, the Nestor of French pediatricians, now in retirement at the age of 86. Professor Hutinel had one other son, who was killed during the war.

The death of Dr. Georges Vitoux, who was the oldest of the French medical journalists, occurred on the street, at the age of 72. His wife had died a few days previously. He was one of the chief collaborators on the *Presse médicale* and had contributed numerous medical articles to various political journals. He was likewise the official editor of the *Bulletin de l'Académie de médecine*.

BERLIN

(From Our Regular Correspondent)

March 13, 1933.

The Cross Breeding of Races

Prof. Eugen Fischer, an authority on anthropology, recently lectured on "The Crossing of Different Races, in Relation to Intellectual Performance." The crossing of different races, of all biologic processes, has the most far-reaching results for the general development of mankind. It is not of such importance to inquire what the results are of a crossing of two individuals belonging to different races. The old conception that was widely accepted that crossbred individuals always present the defects of both parents is fundamentally false. The crossbred individuals that originally gave rise to this belief sprang from haphazard, illegitimate relations between white men and women of the colored races. Quite generally, such persons are despised and rejected by both races represented by their parents. Much greater importance attaches to the crossing of whole groups belonging to different races. The most extensive crossing of races known in Europe took place during the so-called migration of the nations, when large groups of Nordic races crossed with peoples of other European races (Alpine, Dinaric, Mediterranean, antero-Asiatic). Through the mingling of these races of equal intellectual caliber, the present-day high civilizations arose. In regions where the Nordic race is purest, it has not achieved any conspicuous cultural greatness. The highest attainments have been secured in the area in which crossing occurred. Here, for instance, the German people produced most of its musicians, poets and thinkers. Northern Europe, on the other hand, where almost pure Nordic elements are still found, has produced great statesmen, generals and organizers in commerce and industry.

The "laws" governing hereditary physical characteristics are not so difficult to discover, but the "laws" affecting hereditary mental qualities must be deduced. There is no doubt that these, as well as the former, follow the well known mendelian "laws." It is a fact that in especially fortunate crossings the crossbred

individuals have qualities that excel, by far, those of their parents. In other words, they "luxuriate," and all breeding of animals and plants is based on this capacity. Judging from the results of racial crossings, not only in Europe but also among the Japanese, it appears as if such an exuberant development of the mental qualities intelligence, temperament, disposition and character constituted the fundamental basis of European progress, after the completion of the migration of the nations.

Venereal Disease in Germany

The last official census of venereal patients established that, of 372,000 new cases of venereal disease developing annually, 280,000 were gonorrhea; so it was decided at the annual meeting of the Gesellschaft zur Bekämpfung der Geschlechtskrankheiten to take up the fight against gonorrhea with vigor. In fulfillment of this decision, Professor Frieboes and Privatdozent Philipp delivered addresses in Berlin, last December, on "The Significance of Gonorrhea as a *Volkseuche*, or Universal Contagious Disease." Medical science still lacks a specific remedy for gonorrhea, with which quickly to eliminate the danger of contagion. Chronic gonorrhea in women carries an especially grave danger of contagion, and women are especially subject to complications. In Berlin, in the age groups 15-50, 88 per cent of the men were or had been infected with gonorrhea; in Hamburg, even 109 per cent; that is to say, many had been infected two or more times, while others had been spared. The most important preventive measure is general enlightenment in regard to the spread of the disease and its consequences, together with the requirement of a medical certificate by both parties to a marriage contract. In addition, there should be clinical centers for which sufficient funds are available to permit them to concentrate more on the treatment of gonorrhea.

That the federal law pertaining to venereal diseases produces good results, from the standpoint of public health, is generally recognized. However, complaints have been received that "street walkers" in many German cities have become more numerous. The defects in the law and its inadequate enforcement are blamed for these conditions. To produce data to test the justification of these charges, Ministerialrat Schäfer collected from many sources material pertaining to the administration of justice in connection with prostitution. It was found that the present laws properly administered are adequate for keeping the streets reasonably clear of street walkers.

Traffic Privileges of Physicians

In Berlin, Breslau, Hamburg and Kiel, the local directors of the Kraftfahrer-Vereinigung Deutscher Aerzte, some time ago, induced the police departments to grant special traffic privileges to the motor vehicles of the foregoing *vereinigung*, provided they are equipped with the distinguishing insignia (pennant, placard and physician's lamp), during the performance of professional duties. Traffic officers in these cities are instructed to permit physicians whose cars bear the insignia to pass crossings with as little delay as possible. Physicians are allowed to park their cars in places prohibited to other automobilists, or they may be granted the privilege of driving through streets closed to regular traffic, in order to attend a patient.

Centenary of the Hufeland Society

The Medizinisch-Chirurgische Gesellschaft, founded in 1810 by the celebrated Berlin physician Hufeland, came to be called, a hundred years ago, the Hufeland Gesellschaft. Twenty-five years ago, a merger took place with the Demonstrirergesellschaft. As the present chairman of the society, Prof. Hermann Strauss, has said, the aim of the society has been to increase the knowledge of specialists in fields in which they are not themselves active and to make known the progress in the specialties to

general practitioners. With this program, the society does not compete with any other society. The present economic situation prevents the holding of ceremonies commemorative of its hundredth anniversary. Among practitioners of note, this society is highly esteemed.

Program of the Deutscher Aerztetag

At the meeting of the Deutscher Aerztetag, organized by the Deutscher Aerztevereinsbund, to be held in Frankfurt-on-Main in June, questions pertaining to eugenics will be prominent. The invited speakers are Ministerialrat Dr. Ostermann; Prof. E. Fischer, the director of the Kaiser-Wilhelm Institut für Anthropologie in Berlin, and Professor Bumke of Munich, the director of the Universitätsklinik für Psychiatrie. Dr. Brons will speak on some of the proposed changes in the requirements for recognition as specialists. A topic of great importance is charlatanry and the means of combating it. This topic will be discussed by Prof. Dr. Riecke of Göttingen and Dr. Friedheim of Berlin.

AUSTRALIA

(From Our Regular Correspondent)

Feb. 8, 1933.

The Health Problems of Tropical Australia

The tropical portion of Australia and Australia's tropical dependencies make up the largest tropical possession within the British Empire and contains a larger purely white population than any other tropical country. With the exception of a small and unimportant area in Central Australia, there is no part of the Australian tropics where the rainfall is less than 10 inches annually; in most parts it is between 20 and 30 inches. The total area of the tropical portion of Australia and Australia's tropical dependencies is 1,332,320 square miles.

The Australian tropics are of the greatest importance to the commonwealth, because they are within easy striking distance, as measured by incubation periods, of the world's largest endemic centers of smallpox, cholera and plague. The development of commercial aviation and the awakened interest of Asia in world commerce have added unsuspected significance to the geographic relationship.

THE THREE AGES

There have been three distinct periods in the settlement of the tropical part of Australia. These might be called the period of strategic dispersal, the period of economic extension with colored labor, and the postfederation period.

During the first period, which ended with the discovery of gold, garrisons were established at Melville Island, Raffles Bay and Port Essington because of the fear of the increasing commercial activities of the Dutch and the territorial hunger of the French. The soldiers at Melville Island suffered from scurvy; during the occupation of Port Essington, an outbreak of malaria occurred. Malaria had been introduced apparently by Malays from the Dutch East Indies. Records show that only those people in the immediate neighborhood of the settlement became affected. Persons engaged in exploration work suffered no ill effects from the tropical climate. There was no indigenous disease incidental to life in the northern part of Australia during the first epoch of settlement.

During the second period of settlement, natives of the Pacific islands were imported to work on the plantations of Queensland, and in the same period large numbers of Chinese were introduced; in 1891 the Chinese numbered approximately one tenth of the whole adult male population of Australia. It is to this influx of aliens that Australia owes its tropical diseases. The death rate among the Kanakas was terrific, and among the white men who dwelt in Queensland during this period it was enormously in excess of that reported in other Australian colonies.

The federation of the Australian colonies had a pronounced effect on tropical medicine and hygiene in Australia. Among important events was the annexation of British New Guinea, the establishment of the Australian Institute of Tropical Medicine, the transfer of the Northern Territory from South Australia to the commonwealth government, and the seizure of German New Guinea.

The endemic diseases of the tropical part of Australia are malaria, filariasis, hookworm disease, leprosy, various undifferentiated fevers, granuloma, yaws, various forms of ophthalmia and trachoma, food deficiency diseases, dysentery and typhoid. The problems of the native dependencies were about the same, but the morbidity and mortality figures in those countries were much higher.

MALARIA AND FILARIASIS

Malaria occurs in the northwestern part of Australia and in two areas in North Queensland. It usually affects only people who live under primitive conditions and whose food and lodging are poor. Although malaria has become comparatively unimportant in Australia, it might become a danger if there should be any sudden concentration of population in the endemic areas, or if hygienic control should be slackened.

Filariasis appears to have been introduced into Queensland with Kanaka labor in 1863. Between 1900 and 1910 the number of persons suffering from filariasis admitted to Brisbane Hospital varied between forty and sixty annually. The inland towns of Queensland beyond the coastal range were apparently unaffected. Elephantiasis was rare in Queensland. *Culex fatigans*, *Anopheles amictus* and *Anopheles vigilax* are carriers of filariasis. *Stegomyia* is apparently unable to carry the disease. There are, however, other problems presented by filariasis; the most important is that of treatment. There are no known means of preventing the complications of the disease or of determining whether any attempted attack on the worm in the body has been successful.

HOOKWORM

In Queensland, careful measures have been undertaken for the treatment and prophylaxis of hookworm infestation, and the incidence of the disease has greatly decreased; it might be stated that the problem, so far as white people are concerned, is under control. A great deal of work has still to be done among the aborigines. Infestation with *Necator americanus*, the common hookworm in Australia and Melanesia, is not usually directly responsible for symptoms of disease, but it causes a susceptibility to more serious diseases.

The steady increase in the number of known lepers in North Queensland and the Northern Territory is a pressing problem but one that offers hope for a ready control.

Food deficiency diseases and trachoma still mark the edge of the extension of settlement.

During the postfederation period in the history of Australian settlement, the commonwealth government established five laboratories in the tropical parts of Australia.

The fourth period in the history of tropical medicine and hygiene in Australia and its neighborhood is about to commence. The problem of this period will be mainly the settlement of men and their families on the vast tropical areas of the northern part of Australia. The successful colonization of the tropical parts of Australia, the great problem before the present generation, is essentially a problem of applied public health.

Australian Poisoning Statistics

It is customary to associate depressed business conditions with high mortality from poisoning. That there should be a marked divergence from the expected result is remarkable. As a sign that people are determined to "see things through," it is also refreshing.

The suicidal deaths from poisoning have been reduced by 25 per cent and the accidental deaths from poisoning by 47 per

cent. The former is the lowest for five years and the latter for seven years. Taking both groups together, there was 1 death from these causes for 218,210 of the population and 1 for 1,899 of the total deaths. There was an even distribution of the deaths throughout the year. Age distribution shows that most male suicides occur between the ages 30 to 55, while for females the maximum falls between 15 and 34. Suicides by poisonous gas remain proportionately high.

Methods of Tonsillectomy

Australian surgical practice in methods of tonsillectomy has shown a general trend toward dissection, especially in adults, tending to displace the guillotine. The use of electrocoagulation by a few enthusiasts has occasioned in the Australian medical press a voluminous correspondence, which the editors have had some difficulty in maintaining on a strictly scientific level.

Briefly, the diathermists claim that their method is almost painless, does not involve a stay in hospital or a general anesthetic, does not result in hemorrhage, and has a sterilizing effect, which has immediate benefits on infections resulting from such a focal lesion. The advocates of more definitely surgical methods maintain that the diathermists do not know when they have destroyed "the tonsil, the whole tonsil, and nothing but the tonsil," and that the process is tedious and requires many sessions. One eminent otorhinolaryngologist collected numerous patients who had had their tonsils treated by electrocoagulation and the remnants were removed by surgical dissection. The tonsils were then histologically examined. It was found that there was an abundance of lymphoid tissue arranged in the usual tonsillar fashion. In some instances the epithelium covering the tonsil was hyperplastic and, in a few others, cultures from the depths of the removed tissue yielded pathogenic micro-organisms. The conclusions are that electrocoagulation can be used for the removal of tonsils but it has not been decided for what type of tonsillar infection it has its greatest usefulness. An accurate knowledge of the anatomy of the tonsil and a willingness to spend much time must be possessed by those who would remove tonsils by diathermy. It has been said that with this method an unskilled operator will do less harm than by any other method. This is indeed faint praise.

MOSCOW

(From Our Regular Correspondent)

March 7, 1933.

Increasing the Number of Physicians and Medical Schools

During the fifteen years of the soviet government's existence, medicine has penetrated into every corner of the country. The number of hospitals, ambulatories and dispensaries in towns and in the country is continuously increasing. The population demands qualified medical aid. That is why there is a deficiency of physicians, though their number is increasing every year. To fill this gap, the government opens hospitals and medical colleges. The first hospital-medical school has been opened in Leningrad, at the hospital named after Professor Nechaev. It must prepare physicians in two and one-half or three years, since all the students previously had some practical experience. General practitioners and surgeons for district work will graduate at this hospital school. According to the plan, 77 per cent of the hours of instruction are given to medical sciences. The course begins with anatomy, histology and chemistry and is closely linked up with practical knowledge. All the medical studies are connected with practical work in the hospital; for example, anatomy is studied synchronously with operative surgery, physiology with therapy, and so on. Thus the students enlarge their theoretical knowledge and at the same time help the hospital in its current work.

The Moscow Institute of Hematology

The Moscow state institute of clinical hematology and blood transfusion, which was founded in 1926, has clinical, experimental biologic, surgical and biochemical departments and a laboratory for standard serum preparations. The institute has become a center for clinical and experimental hematology. One of its problems is the training of specialists in hematology—clinicians, general practitioners, surgeon-hematologists and physiologists hematologically educated. During the last six years, the institute has studied the pathogenesis and etiology of the anemias. In pernicious anemia, hypoplastic reactions of the marrow were found after prolonged treatment. In 98 per cent of all cases, atrophic processes were seen in the gastrointestinal tract.

In the treatment of chronic benzene intoxication, blood transfusion gives excellent results. It is beneficial in acute cases of aniline poisoning even when coma is present. This treatment not only increases the number of red blood cells and improves oxygenation but also has a hemostatic effect because of the passing of thrombokinase in the blood from the donor to the recipient.

The institute proposed and is already using an apparatus for transfusing preserved blood. The use of blood taken from corpses is also being studied. If obtained properly, it is a valuable material. The institute uses standards for the mass determination of blood groups, prepared from ascitic fluid and exudates. The blood transfusion stations in many large hospitals are provided with those standards and apparatus, and the stations are registering donors from the local population. The donors are usually factory and mill workers, and for their blood they receive only additional food and money enough for purchasing products necessary for blood regeneration. As a result of the institute's work, the transfusion of blood has become a powerful therapeutic agent, which awaits further scientific and practical development.

Six Professors Honored

At the meeting of the All-Russian Central Executive Committee, recently, the degree of honorary science-worker was awarded to the following physicians: Profs. Alexis I. Abrikosov of the First Moscow Medical Institute, for his scientific works in the field of pathology; Prof. Nicolas N. Bourdenko, for his scientific works in neuropathology and his pedagogic work; Prof. Wladimir I. Wojachek of the Military Medical Academy, well known for his studies in otolaryngology; Prof. Ivan I. Grekov of the Second Leningrad Medical Institute, who instructed many scientific workers in the field of surgery; Prof. Alexis W. Martynov of the Moscow First Medical Institute, for his prominent surgical works and pedagogic activity, and Prof. Basil B. Cramer, for his scientific works in the field of neuropathology.

The Death of Professor Gannushkin

The death of a prominent Russian psychiatrist, Prof. Peter Borisovitch Gannushkin, was reported, February 23. He was born in 1875 and graduated in 1898 at the Medical Faculty of the Moscow University. He studied psychiatry with Emil Kraepelin in Munich and became professor of the First Moscow University in 1918. Professor Gannushkin was an active scientific and public worker. In the time of the czars he left the chair of psychiatry at the university as a protest against the reactionary politics of the minister of public education. After the October revolution he worked as director of the psychiatry clinic of the First Moscow Medical Institute, was a member of the state scientific medical council, and was a consultant of many scientific institutes and clinics. Professor Gannushkin was the editor of the *Journal of Contemporary Psychiatry*. His principal works were devoted to paranoia, epilepsy and schizophrenia.

Marriages

WALKER B. BROCK, Tallapoosa, Ga., to Miss Tempie Virginia Patterson of Roberta, February 26.

ELGIE M. HOUGHTON, Lancaster, Wis., to Miss Rose Bausch of Cassville, at Madison, in February.

HAROLD JOHN BELSON, St. Nazianz, Wis., to Miss Sally Mulhern of Milwaukee, February 28.

HENRY M. SEYMOUR ADAMS to Miss Annette Chandler, both of Atlanta, Ga., recently.

JOHN DE WITT HENDRICKS, Indianapolis, to Miss Mary Elizabeth Davis, February 20.

Deaths

John McCoy ☉ New York; College of Physicians and Surgeons in the City of New York, Columbia University, 1895; member of the American Academy of Ophthalmology and Oto-Laryngology, American Otological Society and the American Laryngological, Rhinological and Otological Society; fellow of the American College of Surgeons; emeritus clinical professor of laryngology, University and Bellevue Hospital Medical College, and professor of otology, New York Polyclinic Medical School and Hospital; on the staffs of the New York Eye and Ear Infirmary and the French Hospital; aged 58; died suddenly, March 16, of heart disease.

William M. Spitzer ☉ Denver; New York University Medical College, 1897; member of the House of Delegates of the American Medical Association in 1914; member of the American Urological Association and the Radiological Society of North America; fellow of the American College of Surgeons; visiting urologist to St. Joseph's, St. Anthony's and the Woman's hospitals, and the National Jewish Hospital for Consumptives; aged 57; was found dead in bed, March 17, of heart disease, while in Colorado Springs.

Earl Harvey Bruns ☉ Colonel, M. C., U. S. Army, Denver; Miami Medical College, Cincinnati, 1903; member of the American Climatological and Clinical Association; fellow of the American College of Surgeons; entered the army as an assistant surgeon in 1905; served during the World War; was promoted through the various grades to that of colonel in 1931; aged 53; died, March 16, at the William Beaumont General Hospital, El Paso, Texas, of arteriosclerosis.

Daniel Hunter Bowman ☉ Kenton, Ohio; Starling-Ohio Medical College, Columbus, 1911; past president of Hardin County Medical Society; served during the World War; formerly member of the board of health; on the staff of the McKittrick Hospital; aged 44; died, March 19, at the Veterans' Administration Home, Dayton, of an incised wound of the throat, self inflicted.

Frederic Colton Curtis ☉ Albany, N. Y.; College of Physicians and Surgeons in the City of New York, Columbia University, New York, 1870; past president of the Medical Society of the State of New York and the Medical Society of the County of Albany; Civil War veteran; consultant in dermatology to the New York State Board of Health; aged 89; died, March 24.

Alfred B. De Loach ☉ Memphis, Tenn.; Medical Department of the Tulane University of Louisiana, New Orleans, 1892; for many years secretary of the state board of medical examiners; past president of the Memphis and Shelby County Medical Society; aged 64; on the staff of the Baptist Memorial Hospital, where he died, March 17, of pneumonia and influenza.

Elmer O'Neill Peterson, Canton, Ohio; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1907; member of the Ohio State Medical Association and the Radiological Society of North America; served during the World War; aged 46; died, February 23, in the Aultman Hospital, of cirrhosis of the liver.

Eric Alonzo Abernethy ☉ Chapel Hill, N. C.; University College of Medicine, Richmond, 1901; Medical Department of Columbian University, Washington, D. C., 1903; formerly physician to the University of North Carolina; served during the World War; aged 56; died, March 21, of a self-inflicted bullet wound.

George Martin Ball, New York; Medical Department of the University of the City of New York, 1893; member of

the Medical Society of the State of New York; on the staff of the New York City Children's Hospital; aged 67; died, March 21, of adenocarcinoma of the descending colon.

Hampden Sidney Lewis, Bay St. Louis, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1892; served during the World War; aged 65; died, March 11, in the Hotel Dieu Hospital, New Orleans, following an operation for appendicitis.

John Busby, Spokane, Wash.; McGill University Faculty of Medicine, Montreal, Que., 1891; member of the Washington State Medical Association; aged 64; on the staff of the Sacred Heart Hospital, where he died, March 9, of cerebral hemorrhage.

Wales Averill Haas, Boulder City, Nev.; University of California Medical School, San Francisco, 1926; member of the Nevada State Medical Association; on the staff of the Six Companies, Inc., Hospital; aged 35; died, in March, of acute appendicitis.

Ethel Mary Lyon Heard, Houston, Texas; Woman's Medical College of Pennsylvania, Philadelphia, 1905; served during the World War; formerly instructor in gynecology, University of Texas School of Medicine, Galveston; aged 56; was found dead in bed, March 10, of mitral insufficiency.

John Edward Dewar, Minneapolis; McGill University Faculty of Medicine, Montreal, Que., Canada, 1896; member of the Minnesota State Medical Association; served during the World War; aged 62; died, March 15, of cirrhosis of the liver and cardiac insufficiency.

William Harriet Woods, Kerr, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1893; served during the World War; formerly on the staff of the Veterans' Administration Hospital, Legion; aged 62; died, February 9, of exposure.

Lindley Hastings Stafford, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1907; member of the Indiana State Medical Association; served during the World War; on the staff of St. Francis Hospital; aged 46; died, March 12, of heart disease.

Henry Arnold Cooke, Providence, R. I.; Harvard University Medical School, Boston, 1896; member of the Rhode Island Medical Society; for many years on the staff of the Rhode Island Hospital; aged 66; died, March 17, of bronchopneumonia.

Thaddeus Earl Watkins, Collierville, Tenn.; Memphis (Tenn.) Hospital Medical College, 1912; member of the Tennessee State Medical Association; aged 46; died, February 26, in the Methodist Hospital, Memphis, of pneumonia.

Christian Bauer Kyle, Philadelphia; Medico-Chirurgical College of Philadelphia, 1906; member of the Medical Society of the State of Pennsylvania; on the staff of the Northeastern Hospital; aged 53; died, March 10, of pneumonia.

Estill Victor Wedding ♂ Kansas City, Mo.; Louisville (Ky.) Medical College, 1895; veteran of the Spanish-American War; formerly on the staff of the Research Hospital; aged 58; died, February 7, of heart disease.

Henry Albert Russell, Fair Lawn, N. J.; Howard University School of Medicine, Washington, D. C., 1881; past president of the board of education of Superior, Wis.; aged 77; died, March 8, of heart disease.

Harry L. Williams, Flagler, Colo.; Denver and Gross College of Medicine, 1906; member of the Colorado State Medical Society; aged 52; died, March 1, in the Presbyterian Hospital, Denver, of heart disease.

Charles Herbert Perry, Flat Rock, Ind.; Hospital College of Medicine, Louisville, Ky., 1896; aged 58; died, March 10, in the Robert Long Hospital, Indianapolis, of cirrhosis of the liver and portal obstruction.

John James Atkins, New York; Loyola University School of Medicine, Chicago, 1926; aged 29; on the staff of the Morrisania City Hospital, where he died, March 4, of bronchopneumonia and pancreatic cyst.

Dennis Edward G. Taylor, Stonington, Conn.; New York Homeopathic Medical College and Flower Hospital, 1913; member of the Connecticut State Medical Society; aged 46; died, January 28, of pleurisy.

Don Melville Hooks, Binghamton, N. Y.; Medical Department of the University of the City of New York, 1893; served during the World War; aged 65; died, March 8, of diabetes mellitus and mastoiditis.

Frederick Albert Rahe, Chicago; Chicago College of Medicine and Surgery, 1913; member of the Illinois State Medical Society; aged 46; died, March 13, in the South Shore Hospital, of septicemia.

Oscar R. Meyer, Lanesville, Ind.; Kentucky School of Medicine, Louisville, 1907; member of the Indiana State Medical Association; aged 51; was found dead in bed, March 7, of heart disease.

Cornelius Edward Ware, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1912; on the staffs of the Grady and Georgia Baptist Hospital; aged 43; died, February 2, of pneumonia.

Hugh P. Markham, Pauls Valley, Okla.; Kentucky School of Medicine, Louisville, 1887; member of the Oklahoma State Medical Association; aged 65; died, March 7, of chronic nephritis.

Robert Willis, Linden, Wis.; Hahnemann Medical College and Hospital, Chicago, 1883; Chicago Homeopathic Medical College, 1890; aged 73; died, February 4, of influenza and bronchitis.

Ben Hill Maynard, Lakeland, Fla.; Atlanta (Ga.) College of Physicians and Surgeons, 1899; aged 66; died, March 5, in the Morrell Memorial Hospital, of cardiovascular renal disease.

James C. Mewhinney, Spring City, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1883; aged 73; died, March 10, of diabetes mellitus and coronary thrombosis.

James Oliver White, Worthington, Ind.; Kentucky School of Medicine, Louisville, 1893; Keokuk (Iowa) Medical College, 1894; aged 73; died, February 13, of arteriosclerosis.

Charles Woodward, Chicago; Eclectic Medical Institute, Cincinnati, 1879; member of the Illinois State Medical Society; Civil War veteran; aged 87; died, March 14, of uremia.

John Corseaden Findlater ♂ San Angelo, Texas; University of Oregon Medical School, Portland, 1928; aged 38; died, January 13, in a local hospital, of pneumonia.

Orison N. Falor, New Baltimore, Ohio; Columbus Medical College, 1883; aged 73; died, March 2, in the Alliance (Ohio) City Hospital, of cerebral hemorrhage.

John M. V. Wills, Corsicana, Texas; College of Physicians and Surgeons, Baltimore, 1881; Confederate veteran; aged 86; died, March 8, of arteriosclerosis.

Daniel George Lass, Ocheyedon, Iowa; Vanderbilt University School of Medicine, Nashville, Tenn., 1886; aged 75; died, February 4, of cerebral hemorrhage.

Mark K. Engell, Hyndsville, N. Y.; University of Vermont College of Medicine, Burlington, 1882; aged 71; died, March 4, of cerebral hemorrhage.

Edward Charles Thompson ♂ Williamstown, Mass.; M.R.C.P., London, and the R.C.S., England, 1879; aged 79; died, March 6, of arteriosclerosis.

John W. Leitch ♂ Huntingtown, Md.; College of Physicians and Surgeons, Baltimore, 1896; aged 62; died, March 4, of carcinoma of the stomach.

George F. Sauter, Newport, Ky.; Eclectic Medical Institute, Cincinnati, 1908; aged 66; died, March 4, at his home in Dayton, of arteriosclerosis.

John Porter Davis, Morristown, Tenn.; Chattanooga (Tenn.) Medical College, 1900; aged 63; died suddenly, March 3, of myocarditis.

George Alexander ♂ Asheville, N. C.; University of Louisville (Ky.) School of Medicine, 1913; aged 47; died, March 3, of cerebral hemorrhage.

Percy Warren, Cape Elizabeth, Maine; Medical School of Maine, Portland, 1879; aged 77; died, January 24, in Portland, of myocarditis.

James P. Wortman ♂ Crooksville, Ohio; Ohio Medical University, Columbus, 1898; aged 65; died, March 1, as the result of a fall.

John Edmund Bradshaw, Rose, N. Y.; University of Buffalo School of Medicine, 1876; aged 83; died, March 7, of acute nephritis.

Charles Earl Harris ♂ Akron, N. Y.; University of Buffalo School of Medicine, 1925; aged 31; died, Dec. 24, 1932, of septicemia.

George Christian Wellner, Minneapolis; Rush Medical College, Chicago, 1873; aged 83; died, March 3, of pneumonia.

Otto Stephan, Cincinnati; Pulte Medical College, Cincinnati, 1902; aged 64; died, March 22, of arteriosclerosis.

Fred Tracey Nye ♂ Irvington, Ala.; Chicago Medical College, 1881; aged 77; died, February 7, of myocarditis.

James C. Crunk, Belfast, Tenn. (licensed, Tennessee, 1889); aged 81; died, January 13.

Bureau of Investigation

ERNEST DONALD ROBERTS—IMPOSTOR

Many Physicians Have Been His Victims

Ernest Donald Roberts, alias Dr. A. L. (Jerry) Castle, alias Dr. Gwyn Chadwick, alias Dr. John Bellinger, alias Dr. George Neville, has finally received a setback. The newspapers of Columbus, Ohio, for March 22 recorded that Roberts had been arrested by the Columbus Detectives Earl Heise and Albert A. Knappenberger in connection with a bank defrauding scheme, after he had made preliminary preparations to defraud a Columbus bank.

The Bureau of Investigation first heard of Roberts' activities from Dr. M. McC. Fischer, Director of Public Health of the City of Duluth, who wrote Sept. 8, 1932, as follows:

"One A. L. (Jerry) Castle, alias Ernest Donald Roberts, pretending to be a physician on vacation from Honolulu, recently victimized a number of Duluthians. His method of approach was through the internes of a local hospital to whom, for a period of some 3½ weeks, he was extremely gracious and whom he entertained generously and at times lavishly. Following his sudden departure, a crop of bad checks has come into bloom.

"The man claims to be Welsh and to have had his training in England. He speaks English, French, German and Greek and has a foreign accent. His knowledge of medicine and of outstanding medical men is surprising and convincing even to the medical mind. His manner is extremely gracious and polite. His conversation shows him to be well conversant with music and literature as well as medicine. Among other things polo is a favorite game of his and he rides well.

"The high lights of his physical appearance are fairly covered by the following: Well dressed; black mustache; dark hair; swarthy complexion; age, about thirty years; height, 5 feet, 8 inches; weight, 150 pounds; eyes, hazel gray; nose, inclined to the Roman; teeth, unusually white and even."

The essential facts given by Dr. Fischer were published as an item of Minnesota medical news in *THE JOURNAL* of Sept. 24, 1932. Following its publication, a letter was received from another Duluth physician—Dr. O. H. Hanson—who saw the news item and who sent us a "snapshot" of Roberts. The Bureau of Investigation had several enlarged prints made from this, as the original had to be returned. Dr. Hanson reported that he had just learned that Roberts had been putting over his schemes in Madison, Wis.

About this time a letter was received from a physician in Madison, Wis., who wanted to know what we could tell him about an individual who called himself "Dr. Gwyn Chadwick" and who was posing "as a Welsh graduate of London Medical College and of Cambridge" and who had been in Madison for two weeks attending the University of Wisconsin clinic. Our correspondent reported that the man told fantastic tales of his life in Singapore and Honolulu and had claimed to have done work at the Peter Bent Brigham Hospital in Boston, at Saranac Lake, and at Tulane University. The physician who wrote to us asked us not to publish his letter or disclose his name. From the physical description given of "Dr. Chadwick," there seemed no doubt that this was Ernest Donald Roberts, alias Jerry Castle, under another name, and this information was sent to the Madison physician, together with one of the enlarged prints of Roberts' picture. While the picture was an indifferent one, the Madison physician, and others to whom he showed the photograph, had no difficulty in identifying "Dr. Chadwick" as Ernest Donald Roberts. We learned, also from the same physician, that "Chadwick" had deposited \$50 in cash in one of the smaller branch banks of Madison and two days later deposited a check for \$500, supposedly on a San Francisco bank, withdrawing \$200 in cash two days later. He is said to have cleared \$150 by this transaction.

Nothing more was heard from this impostor until the middle of February, this year, when a letter was received from an Atlanta, Ga., attorney, Mr. Harry S. McCowen, who wrote that

he was anxious to locate a man who had spent January in Atlanta and posed as "Dr. John Bellinger." Mr. McCowen stated that "Bellinger" claimed to be an Oxford graduate, talked about having maintained polo ponies, and claimed to have lived in Calcutta and various other places. The Bureau of Investigation sent Mr. McCowen one of the enlarged snapshots that we had of Roberts, and he immediately wrote back stating that he had shown the photograph to several persons who knew "Dr. John Bellinger" in Atlanta and they were all positive that this was the same man. Mr. McCowen also reported that he had turned the photograph over to a salesman for an automobile from whom "Bellinger" had obtained a Cadillac coupé. Later we received from Mr. McCowen a photograph of Roberts that had been taken at Asheville, N. C., where the impostor was alleged to have spent some weeks in the Sunset Heights Sanatorium, leaving there about March 4 "after giving a bunch of worthless checks."

Now comes the report of Roberts' arrest in Columbus, Ohio. According to the *Ohio State Journal* of March 22, Roberts is known by more than a dozen aliases and has confessed operating his fraudulent schemes in fourteen cities and admitted that he obtained money in other cities which he could not recall. The paper goes on to report that Roberts still had the Cadillac, which he admitted buying with a worthless check in Atlanta. He had in his possession a suitcase full of bank books from numerous cities! According to the same report Roberts is said to have admitted operating his schemes in Albuquerque, N. M.,



Photograph of Ernest Donald Roberts, alias Dr. Jerry Castle, alias Dr. Gwyn Chadwick, alias Dr. John Bellinger, alias Dr. George Neville, etc., etc. Roberts' victims seem to be physicians and banks with an occasional venture into the automobile field.

San Francisco, Santa Barbara and Palo Alto, Calif., Seattle, Wash., St. Louis and Kansas City, Mo., Lincoln, Neb., Dallas, Tex. and Nashville, Tenn.

Roberts was reported to have deposited \$10 in the University Branch of the Ohio National Bank and to have admitted that he intended attempting his fraud scheme there. He had opened the account under the name of Jerry Cooke of Tucson, Ariz. Further, we learned from the Columbus newspaper that Roberts was born in Austria and entered the United States in 1923 at Honolulu and became naturalized in 1928. It is also stated that in 1930 he went to New York and was appointed a federal pathologist and, as such, served in the Bureau of Sugar Industries at Houma, La.

On learning of Roberts' arrest, the Bureau of Investigation immediately sent what information it had on the man to the police department of Columbus, and asked for a copy of any photograph the police might make of the impostor. Chief Kunds of the Columbus police department sent both a photograph and fingerprint classification of Roberts. The photograph is reproduced above.

On April 4 Roberts was brought back to Atlanta, Ga., by a deputy sheriff and put in jail. It is said that his trial on the worthless checks matter will come up in about thirty days. In the meantime a Honolulu paper has come to hand in which reference is made to Roberts' arrest. The article states that so far as could be ascertained Roberts had got into no trouble while in Honolulu but that after he left there inquiries came back from various places indicating that under various names he had been involved in irregularities.

Correspondence

RECENT CRITICISMS OF PSYCHOANALYSIS

To the Editor:—It is surprising that after nearly forty years it should still be so difficult to have a calm, critical attitude toward psychoanalysis. Neither the proponents nor the critics seem to have difficulty in recognizing the emotional bias of those who disagree with them, but they become indignant at any suggestion of such prejudices in themselves.

Psychoanalysts have again been accused of rejecting rational criticism as a manifestation of unconscious emotional "resistances." So far as this has been done it should indeed be condemned, for behind every argument there is an emotional factor; but it is the truth and falsehood of the argument that must be established, independent of the emotional state of the critic.

It must be admitted, however, that it is extremely difficult to answer scientifically an article in which the emotions are so intense as to obscure the rational thinking. An extreme of this type is represented by the editorial in the March issue of the *Illinois Medical Journal*, in which no criticism at all is apparent, but only the personal preferences and prejudices of the writer.

It is even somewhat difficult to believe in the objectivity of a critic whose unquestionably honest attempt to evaluate psychoanalysis (Sachs, Bernard: *The False Claims of the Psychoanalyst*, *Am. J. Psychiat.* 12:725 [Jan.] 1933) is riddled with *ad personam* arguments, such as that analysts are "infantile," "unethical" and occasionally employ an "almost dishonest method of argument."

It is particularly unfortunate when such an article comes from a man from whom one might expect objective criticism. One expects a critical article to deal with methods and with findings. Dr. Sachs confuses such fundamental points as free association and interpretation. Before one discusses the validity of interpretations—which can be done only on the basis of knowledge of the material—it is necessary to comprehend clearly what interpretation means.

Unless the fundamentals are clearly comprehended, it becomes futile to attempt to deal with the superstructure and indeed profitless to argue about such admittedly problematic points as distinction between psychosis and neurosis or hypotheses as to psychic structure.

Such fundamental errors seem to lend some justification to psychoanalysts who "accuse those who object to their pet theories of ignorance."

KAREN HORNEY, M.D., Chicago.

"THE MATERNITY WARD OF THE GENERAL HOSPITAL"

To the Editor:—The contribution of Drs. DeLee and Siedentopf in *THE JOURNAL*, January 7, offers irrefutable evidence of the fact that institutional care of parturients is accompanied by an increased incidence of morbidity and mortality over that of the community as a whole. They ignore the fact that practically all hospitals, whether they are called "general" or are conducted for some special field of medicine or obstetrics, are subject to the same laws of human necessity—the really sick enter them—therefore, the mortality rate is higher than for the community as a whole.

When the specific cause of a disease is known (as diphtheria, varicella or tetanus), many influences operate to affect the incidence and virulence of the malady: the virulence of the bacterium, the resistance—immunity—of the individual, regional conditions, social and economic environment, climate, food and water supply, each has its weight. In such a complex problem as puerperal infections the solution is infinitely more com-

plicated, for one is dealing with a multiplicity of diseases—not a specific entity. Puerperal infections are not preventable by a specific prophylactic therapy; puerperal infections are not curable by a specific medication. These facts are not known by the public, who believe they are subject to the same medical laws as the twenty-three or twenty-five diseases that do have a specific prophylaxis and (or) cure. Puerperal infections are preventable only by a most meticulous regard to personal cleanliness and by a sane hospital sanitation; the general principles to secure these results are universally accepted but the methods of attaining the object are not subject to specific methods.

Dr. DeLee is convinced that morbidity and mortality are lower in segregated maternities than in obstetric divisions of general hospitals. The caption of the paper and the general context of the subject matter ignore the maternity hospital except in two specific statements: "Numerous authorities agree with me that women are safer from infection at home or in a *specialized maternity building* . . ." (italics mine). Again, "Dr. Siedentopf and I collected more or less documented reports of thirty-eight epidemics of puerperal infection, of which thirty-five were in the maternity wards of general hospitals." The context is uncertain, but it is a valid inference to hold that the three other epidemics of infection must have occurred in maternity pavilions, as nothing is mentioned in the paper of epidemics occurring in the home. I question the employment of the term epidemic; for a run of a few cases of infection in a hospital hardly connotes a widespread dissemination of a disease—the term covers too much territory.

On the face of the returns, a sad reflection is cast on the much lauded segregated maternity. Three epidemics therein against thirty-five in the wards of general hospitals. There are many, many hundreds, running into some thousands, of hospitals which have more or less clearly marked obstetric divisions. In some the segregation is efficiently and perfectly consummated; in others, maternity cases are unjustifiably and indiscriminately mixed with all other types of hospitalized patients. In some the delivery units are isolated; in others, the confinement is conducted in the operating room without thought as to the nature of the surgical operation that preceded it. To what extent and to what degree of efficiency segregation is carried out in all hospitals accepting maternity cases is a survey worthy of the most serious consideration. For the large hospital to permit any sort of admixture of obstetric patients with those of general surgery and medicine is an indefensible practice; for the small hospital in small communities it is an economic necessity, though the expediency does not make it good practice. The sporadic case of puerperal infection in a specialized hospital and the division of a general hospital demands perfect isolation, which means that a definite suite for such patients must be allocated in another part of the hospital.

According to the report on hospitals published in *THE JOURNAL* last year there were enough bassinets, and therefore a presumed provision for maternity cases, on a basis of a ten day stay, to provide obstetric care for at least double the numbers who did avail themselves of the benefits of hospitalization; some 700,000 women were delivered in hospitals out of the 2,500,000 new mothers. Among all the hospitals of the United States there are but six or seven nationally known maternities (segregated pavilions); some fifteen more are of worthy consideration; some are merely locally known, and such comprise those which come within the category of private enterprises, nursing homes or "refuges." Therefore, on the face of the facts, *three epidemics of puerperal infection among seven (or twenty-one) maternities, and thirty-five epidemics among the many thousands delivered in general hospitals* do not offer convincing proof of the advantage of the special maternity pavilion over segregated wards of general hospitals. I may state that

for some years I was in charge of an obstetric division in a general hospital. I was the only officially appointed man, though some eight or ten others had the privilege of the hospital-obstetric service. At first the few obstetric patients were indiscriminately placed in wards with other patients—private room patients were located next to any type of general medical or surgical patients. Later separate provisions were made for obstetric patients. In the years we never had a suspicion of an epidemic—and the very few sporadic cases of morbidity had a logical explanation for their cause. For the last three years and a half I have been the directing head of the maternity division in a general hospital, with adequate provisions for securing isolation for appropriate patients, and segregated from the general hospital. In 1,300 cases to date there has been but one death—of a woman who had had no prenatal care, who entered the hospital with double ablatio retinae, ablatio placenta, cardiovascular break, and marked renal and hepatic dysfunction, and who died after a two day stay in the hospital.

Drs. DeLee and Siedentopf give slight reference to the fact that postabortal infection plays its part in the loss of the 6,000 women from infection; in a report which shortly will be issued it will be shown as a result of a remarkable survey that approximately one half of all women dying from puerperal infection succumbed from the effects of an abortion. This fact alone cuts the doleful picture of the ravages of sepsis at term in two.

Again, practically no cognizance has been taken of the fact of autogenous infection and its incidence. No consideration has been given to the indubitable, if unmeasurable, factor of the absence of immunity to bacterial invasion; they certainly play important parts in all operative work, both obstetric and surgical. They are known to exist, but who can determine their rôle in infection (puerperal) when scrupulous regard to asepsis is practiced by operator and operating room personnel, and, therefore, evaluate their incidence? In my earlier years I taught my students that probably 10, even 20, per cent of puerperal infections were autogenous in origin. Of late years I have advanced the belief that a full 90 per cent had that obscure origin wherein the operator was a meticulous observer of the tenets of modern theories of asepsis and his nursing staff was imbued with the same altruistic principle. What the ratio is between autogenous and heterogenous puerperal infections throughout the country is impossible of determination, but I believe that a sufficient number of practitioners and obstetricians are inspired by a conscience and training to make a "spontaneous" origin an element worthy of serious consideration. In view of the work done in large hospitals where every facility is offered for the near acme of perfection I would hazard the belief that the majority of puerperal infections are due to conditions beyond the control of the attendants, i. e., were latent before the patients entered the hospital.

I would speed the day when child-bearing will be so safe, all possible complications and emergencies eradicated or robbed of their sting, that not one woman or her child shall be lost. Will that utopian dream be realized? I doubt it. Momentous events of life always will carry their grave hazards in every activity of life. I am optimistic enough to believe that the betterments in the future will transcend the phenomenal progress of the last fifty years.

One can heartily agree with Rock, who states that 71 per cent of preventable deaths follow operative deliveries. When these operations are justified by experience and good teaching, and are definitely indicated, the unhappy consequences are deplorable but defensible. When the same type of operations are employed without indication, or with indications so specious that they are ludicrous, when any untoward result or the eventual fatality follows, then the operator has perpetrated an inexcusable transgression against sound obstetric principles. Drs. DeLee and Siedentopf quote Rock; therefore they must

subscribe to his dictum: We see 6,000 women succumb from septic infections, one half of which are the result of abortion, often criminal in cause; of these 3,000 women dying from sepsis at term, 71 per cent, 2,100 are due directly to an operation. Whether this deduction is scrupulously accurate or not, it suggests that obstetricians should limit their operative work to clearly indicated reasons. If eminent obstetricians would abstain from preaching broadcast the spurious news that routine prophylactic forceps, routine cesarean section, routine version, routine episiotomy were the acme of obstetric proficiency and would devote themselves to the inculcation of sound obstetric principles, a new era in obstetric practice and thought would be attained. As it is, too many physicians teach their patients that child-bearing is a pathologic process and delivery must be invariably consummated with the minimum of time and pain; as a result, people believe that this is the up-to-date scientific obstetric procedure. If physicians would present a united front with a clear propaganda that "polypragmatism"—a euphonious synonym for meddlesome midwifery—is irrational, is so highly dangerous that it should not be permitted, more lives would be saved than by this tirade against the general hospital as a unit in the care of the laboring woman.

The maternity pavilion, just like the segregated obstetric department of a general hospital, will subject its patients to the risks of infection unless the one as well as the other has provision for absolute isolation of all suspected and actually infected mothers and babies. The maternity pavilion may more readily secure this isolation unless the obstetric department of the general hospital has the most hearty support and cooperation of the members of the whole staff. The entire personnel of the maternity pavilion think and act with an obstetric mind and conscience. The personnel of a general staff rarely see problems from an obstetric point of view: they are inclined to attempt the application of general hospital regulation to obstetric needs. Obstetricians constantly refer to the fact that the general staff and superintendent in particular try to impose restrictions on the obstetric department which too often impose absurd results—in other words, the staff looks down on the obstetricians and does not give a whole souled cooperation.

RUDOLPH W. HOLMES, M.D., Chicago.

[The letter by Dr. R. W. Holmes was submitted to Dr. Joseph B. DeLee, who replies:]

To the Editor:—Oliver Wendell Holmes, in a similar situation in 1855, when his paper on puerperal fever was attacked in an article by Meigs, had this to say:

There are expressions used in it which might well put a stop to all scientific discussions were they to form the current coin in our exchange of opinions.

One unpalatable expression (several in this case) I suppose the laws of construction oblige me to appropriate to myself, as my reward for a certain amount of labor bestowed on the investigation of an important question of evidence, and a statement of my own practical conclusions. I take no offense and attempt no retort.

Only just so far as a disrespectful phrase may turn the student aside from the examination of the evidence by discrediting or dishonoring the witness, does it call for any word of notice.

The first sentence in this criticism of our paper betrays the fact that the critic read the article somewhat hurriedly. Our paper proved that hospitalization of deliveries, normal as well as pathologic, has increased enormously in recent years, yet the maternal mortality has not decreased. Septic abortion alone cannot explain this disparity. Dr. Murphy of the United States Census Bureau could not supply me with statistics on this point—nor could Dr. Dublin of the Metropolitan Life Insurance Company.

Every one knows that the hospital is the dumping ground for dying botched obstetric patients, but the immense number of normal patients now delivered in hospitals should have absorbed these deaths and shown a balance on the credit side. However, we are still in the red. Facts are presented which prove that the deaths from puerperal infection, not deaths

from septic abortion or from botched cases dumped in, but of women who entered the hospital well, had actually increased. Siedentopf undertook this study at my request and he was prejudiced against my thesis at the start. What he found in the literature converted him.

After his presentation, I took up the word. In 1926 I had published a paper on this subject in the *Modern Hospital* magazine and was sharply criticized, as now. I answered those critics in 1927 and again in 1933. Several of the critics had suffered converting experiences in the meantime—to which I referred. I would request reperusal of these replies in my 1933 paper, to save repetition here.

I also showed that the surgical, as well as the puerperal, case suffers the dangers of cross infection.

Then I mentioned the methods of transmission of contagion, the indirect contact, direct contact and air borne (to put them in the order of their importance), ending with the history of the Chicago Lying-in Hospital, which confirmed the experiences accumulated in other hospitals. The last presentation proves that I have been purely objective in this discussion, without any personal bias.

There is nothing sacrosanct about a "special maternity hospital." If it has not a properly isolated septic pavilion it is no less dangerous than a general hospital, as see the instances cited by MacGregor and myself.

Dr. Holmes states that we give practically no cognizance to the incidence of auto-infection. But Siedentopf quotes Kinloch, Smith and Stephen as supporting Young to the effect that "auto-infection as a primary factor plays a quite unimportant part in the death rate from sepsis and that in our search for essential causes we must address ourselves to the remaining factors of contagion and trauma." Then he asks why auto-infection should occur more frequently in hospital than in home and midwife cases.

Although Jaggard in 1889 taught that "puerperal infection is always exogenous, never endogenous in origin," I am a firm believer in auto-infection; but it plays a small rôle in practice. About the time of the change of the century, a period during which our critic was attached to the institution, the Chicago Lying-in Hospital, Maxwell Street Dispensary, had a run of 3,990 consecutive deliveries without a single mother's death from any cause. Good luck, of course, when one thinks of eclampsia and placenta praevia, but there was no "auto-infection" death and we followed our cases through, including those sent to hospitals.

There are many causes for the persistence of a high maternal death rate in the world (three were mentioned in our paper). Nature herself kills many by rupture of the uterus, abruptio placentae, auto-infection, postpartum hemorrhages, eclampsia. Improper interference with nature adds to the list, and inadequacy of the attendant in the presence of emergencies too; but "one potent cause" as the Committee of the American Gynecologic Society puts it, "is puerperal infection in general hospitals," and to help to remove this cause is the single and sole object of my paper.

Do we know enough about the habits of bacteria? We do not. Recent studies are rendering shaky the very foundations of bacteriology. We still hold fast to the belief that bacteria cause disease, although how they do it may not be known.

The puerperal case cannot, must not, be compared with the surgical case. One undergoes an operation (labor) lasting from one to seventy-two hours and then has an open wound (the vulva) for at least seven days; in the other a wound is made under ideal conditions and soon closed, then sealed until it is healed. In the one the "aseptic technic" must reign for a full week or more; in the other for only an hour or two.

As I said in 1927 and again in 1933, "I will concede that if the maternity ward in the general hospital were on a com-

pletely separated floor, and that if the doctors, students, nurses, orderlies, laundrymen and maids always carried out an intelligent aseptic technic, the equivalent of that practiced in the best surgical operating rooms, while even then it would not be possible to insist it is perfectly safe to treat maternity cases under the same roof with surgical and medical cases, the element of danger would be reduced to such a minimum that the public would be willing to accept it against the expense and trouble of carrying out ideals."

The Cleveland Obstetrical Society demands "actual physical separation and entirely separate personnel for safety. Isolated separate labor and delivery rooms are necessary. The laundry of the maternity division should never be mixed with that of the medical and surgical floors, so that sheets, pillow cases, and the like that have been used by infected surgical patients cannot be sent from the laundry to the obstetric floor. No hospital has the moral right, and none should have the legal right, to accept cases for delivery without making physical and administrative preparation for their safe care." What more do I ask than this perfect separation? We differ only as to how such perfection can be attained.

Dr. Holmes concludes "the maternity pavilion, just like the segregated obstetric department of a general hospital, will subject its patients to the risks of infection unless the one as well as the other has provision for *absolute isolation of all suspected and actually infected mothers and babies* (italics mine). The maternity pavilion may more readily secure this isolation unless the obstetric department of the general hospital has the most hearty support and cooperation of the members of the whole staff. The entire personnel of the maternity pavilion think and act with an obstetric mind and conscience. The personnel of a general staff rarely see problems from an obstetric point of view: they are inclined to attempt the application of general hospital regulation to obstetric needs. Obstetricians constantly refer to the fact that the general staff and superintendent in particular try to impose restrictions on the obstetric department which too often impose absurd results—in other words, the staff looks down on the obstetricians and does not give a whole-souled cooperation."

Exactly. In our paper Dr. Siedentopf and I stated the factual results and gave the immediate causes. Our critic clinches our argument by giving the fundamental causes. It is now clear why the maternity pavilion is safer: "*The personnel of a general staff rarely see problems from an obstetric point of view.*" This explains why it is impossible (1) to keep the laundry of the septic medical and surgical cases away from the obstetric ward; (2) why mattresses and pillows are not bacteriologically sterilized between cases; (3) why the dishes are not actually sterilized when used in common; (4) why the interns and nurses are allowed to go from the wards where they pick up streptococci in their throats and on their hands and carry them to the maternity; (5) why the staff will crowd around a septic postmortem and then disperse unconcernedly throughout the wards; (6) why the wall washers use the same pails and sponges all over the hospital and the orderly mops up the pus in the surgery after appendicitis operations and then mops up the birth room—and so on through the myriads of indirect contact infections. The obstetric case is different.

Experience throughout forty years has proved that most hospitals cannot or will not carry out the extreme measures necessary to produce perfect isolation. Human frailty, and incomplete knowledge of the habits of bacteria and the resistance of puerperas, make it necessary to erect actual architectural barriers in addition to those of "technic" (administrative) against contagion.

Finally, to avoid repetition, since all the objections were foreseen and answered, we wish that those who on first reading felt our position was untenable would please reread the

original article and also the three published in the *Modern Hospital* magazine (reprints will be supplied on request) and, when so doing, follow Socrates' advice "to lay aside prejudice, passion and sloth."

J. B. DeLEE, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HABITUAL PREMATURE LABOR

To the Editor:—A woman, aged 35, has just had her fifth premature termination of pregnancy. This pregnancy had progressed about seven and one-half months, and this was the longest she has ever gone. Two years ago she went six and one-half months. In three instances in which I have followed her case she has apparently progressed in a perfectly normal manner for four and one-half to five months. Then, while the fetal heart sounds continue, it is noted that the uterine development is much retarded. In this case, although her history was absolutely good for between seven and seven and one-half months, the uterus was not enlarged more than would be expected at the end of five and one-half months. In this instance, active fetal heart sounds were heard, November 26. She felt fetal life rather weakly, November 27. Labor pains began, December 4, with complete expulsion of the placenta and membranes on the 5th. The fetus obviously had been dead for several days. The placenta showed numerous areas of thrombosis, and undoubtedly the blood supply to the baby had been thereby restricted. The patient has been studied from practically every possible angle. Repeated Wassermann tests on both herself and her husband have been negative. Furthermore, there is no reason to suspect any syphilitic history. A few years ago a pair of diseased tonsils were removed in the hope of eliminating a possible source of infection. During one of her pregnancies there was a transitory albuminuria. She has a moderately enlarged thyroid gland, but there are no evidences, either on physical examination or as a result of basal metabolic study, to suggest toxicity. Chemical examination of the blood has given entirely normal results and examination of the blood for undulant fever has been negative. There has been a very mild secondary anemia. The patient is extremely anxious to have children, and I would appreciate any possible suggestions in the case. Please omit name.

M.D., Pennsylvania.

ANSWER.—Habitual premature labor, after viability but before term, is a discouraging condition. It has been the bane of obstetric existence for many years and the only real improvement has been in those cases in which syphilis is the cause. Naturally, if syphilis is cured the pregnancies will go to term.

In *THE JOURNAL*, Dec. 17, 1932, page 2134, there is a good reply to a question regarding the causation of repeated miscarriages in the early months of pregnancy to which the inquirer is referred. The present reply will cover, to some extent, the question of the causation of habitual premature labor.

The most common causes, other than syphilis, of the latter condition are infections of the cervix and endometrium, infantile uterus, latent nephritis, toxemia, and some forms of anemia. A study of every case must be made along these lines and treatment directed accordingly. A diseased cervix should be cauterized and if there is an evidence of endometritis (the "irritable uterus" of older writers) a curettage might be indicated, although little benefit is likely to accrue from it.

In infantile uterus little can be done because the uterus will grow and dilate up to a certain point, at which it becomes intolerant of its burden.

In all such cases the following treatment may be recommended:

1. The patient should have rest in bed from the third or fourth month until term: complete rest in bed, the patient not even being permitted to go to the toilet after the fifth month, and no coitus.
2. A carefully selected nonfattening diet should be given with an abundance of all the vitamins.
3. As a routine measure, small doses of iron, arsenic, mercury and iodine should be given. Even if the basal metabolism rate is normal from 6.5 to 16 mg. (from a tenth to a quarter of a grain) of thyroid, three times a day, should be given, but its action should be carefully watched.
4. The foot of the bed should be kept elevated 8 or 10 inches to relieve pelvic congestion and also the pressure of the ovum on the os, if possible.
5. At the first sign of an irritable uterus, morphine is given to stop its contractions.

Enough has not yet been learned about the hormones of the anterior pituitary and of the ovary, but it is possible that the immediate future may bring light with it, and these may be found useful in habitual premature labor.

ETHYL CHLORIDE AS ANESTHETIC

To the Editor:—How does ethyl chloride rate in safety as a general anesthetic, compared with other general anesthetics? I understand the Forsythe Dental College has used ethyl chloride in many thousands of cases without any untoward effects. Do you know anything about this?

OTTO F. DIERKEE, M.D., Watertown, Wis.

ANSWER.—Ethyl chloride is not considered as safe as ether, nitrous oxide or ethylene, especially in operations requiring anesthesia of more than a few minutes' duration. It is said to be safer than chloroform, although Stoewa (*Arch. f. exper. Path. u. Pharmacol.* 166:15, 1932) has reported experimental data to show that ethyl chloride is highly toxic for mice and that the administration of it, in concentration of 5 per cent, for one hour, causes cardiac, hepatic and renal injury, and death in from eight to fourteen days. It is wise to use a dilute vapor when administering ethyl chloride; that is, it should be given with plenty of air or oxygen. Its use is generally confined to inducing unconsciousness when anesthesia is to be accomplished with ether or for short periods of analgesia or anesthesia, as for incision of a furuncle. It is a highly inflammable agent; when it is used, caution must be exercised that it does not become ignited. For maximum safety it should be given by the open drop method, but in some cases it is given by the closed or semiclosed method. It is easily portable, and for that reason it is often chosen in preference to nitrous oxide or ethylene. It produces anesthesia quickly, and an overdose may be arrived at so quickly that the warning signs are not observed. Shields (*Canad. M. A. J.* 24:250 [Feb.] 1931) called attention to the safety of ethyl chloride when properly administered, and its danger when improperly administered. Weller, of Forsyth Dental Infirmary for Children, Boston, says that ethyl chloride has been used in more than 130,000 cases at Forsyth in the last fifteen years, without fatalities or other untoward results.

TRAUMA AND LICHEN PLANUS

To the Editor:—A patient of mine sustained an eruption of the skin, lichen planus, two weeks after an automobile accident. Would it be logical to assume that the accident was the cause of the eruption? Kindly omit name.

M.D., Massachusetts.

ANSWER.—The cause of lichen planus is not known. There are a number of theories of its etiology, the one that has long been the favorite being that of nervous exhaustion, brought on by overwork, grief or anxiety, and often occurring in well nourished persons. This fits a large percentage of the patients with this disease; but there are a number of exceptions, so that the theory is rejected by some dermatologists.

The second in favor among the authorities is that lichen planus is a general disease due to infection. Several organisms have been nominated for this honor, but none have been found guilty thus far.

Trauma has been held responsible in some cases, but these are exceptional.

Other theories resemble those held for many diseases whose etiology has not been discovered; but they have been so seldom seen in connection with lichen planus that not much credence is given them.

An automobile accident could be held as having had something to do with the onset of the disease if either of the first three theories is credited. In the absence of any proof of the etiology, it cannot be assumed that this is a fact.

OPEN AIR AND CONDITIONED AIR TREATMENT IN TUBERCULOSIS

To the Editor:—As it has been demonstrated that the old view of ventilation (poisoning by carbon dioxide, and so on) is wrong and that overheating is the main trouble, on what grounds are patients with tuberculosis put in the open air? It cannot be to lessen respiration, for the carbon dioxide in a crowded room is of a much lower percentage than in the bronchial tract. One may reply that the cold striking the face stimulates nature's defensive forces. Then why not keep the patient in a closed room, free from dust and odors, with the temperature sufficiently cold to stimulate the defensive forces? Is it really the rest in bed, and hence rest of the lungs, that does the good, whereas it is thought to be the open air? Then why is an effort made to stimulate nature's defensive forces, when it is known that such treatment as milk injection does harm by breaking down the barriers in the lungs?

W. B. PALMER, M.D., Furman, Ala.

ANSWER.—Since it has been demonstrated that the qualities which serve to differentiate between good air and bad air are physical rather than chemical, views concerning the open air are rapidly changing. The Chicago Ventilation Commission in 1914 and the New York Ventilation Commission in 1923 demonstrated that the human body functions best when the temperature of the air is approximately 68 F., the relative

humidity is from 40 to 50 per cent, and there is slow movement of the air. There is no place on the earth's surface where these conditions constantly prevail. Therefore there is extant a widespread movement for conditioned air in the buildings where people live and work. Air properly conditioned has all the pollen and other foreign material removed by filters. During cold weather it is warmed and humidified; in hot weather it is cooled and dried to the proper humidity. There is a constant intake, whether the building is a factory, school, office building or home. The air is kept in slow circulation toward the outlet; thus, the air is pure (free from contamination); there is no question about its chemical constituents, and its physical qualities are ideal.

The conditioning of air to prevent disease, to aid in the healing of disease, and to keep the body in a good state of health has too long been neglected. The tuberculous patient has a better chance for recovery when the air which comes in contact with his body and which he breathes is properly conditioned than he does when he is forced to be exposed to and breathe air that is at one time too warm, another too cold, too dry, too moist, and always contaminated with pollens, dusts or other foreign material.

CALORIC VALUE OF BLOOD

To the Editor:—A man recently told me that he met a tribe in Africa the members of which live on blood. I doubt this. Would you kindly tell me how many calories would be derived from drinking one quart of blood?

JOSEPH HALTON, M.D., Sarasota, Fla.

ANSWER.—One quart of blood weighs approximately 1,000 Gm., or 1 Kg. Cow's blood contains approximately:

Water, 80 per cent	
Solids, 20 per cent, including:	
Hemoglobin, 10 per cent, or 100 Gm. per quart....	× 4 = 400 (?)
Other proteins, 7 per cent, or 70 Gm. per quart....	× 4 = 280
Sugar, 0.1 per cent, or 1 Gm. per quart.....	× 4 = 4
Fatty substances, 2 per cent, or 20 Gm. per quart..	× 9 = 180
Total per quart.....	864

It is questionable, however, whether hemoglobin has a caloric value in the body equivalent in any reasonable measure to that of simple, digestible proteins. Therefore, a liberal discount on the figures cited would decrease the assimilable caloric value of the blood to something approximating 600 calories per quart—not widely different from that of milk of relatively low fat content.

ABDOMINAL PAIN FROM ADHESIONS IN POSSIBLY PSYCHASTHENIC PATIENT

To the Editor:—A woman, aged 31, complained of pain over an appendectomy scar. The pain is continuous but is much worse at the time of her menstrual period. Two years ago she noted pain and numbness in the right arm, which spread to the left arm and traveled upward in both arms. The pain is less in summer and worse in winter, and has been worse this winter than ever before. The pain is worse at night or whenever the hands are used. Any delicate movements of the hands occasion pain and tingling sensations. This stops around 10 a. m. During one attack, examination showed sensation to pin prick. Touch was normal, but pressure gave pain and heat sensations. Responses to heat and cold were normal, and tactile discrimination was normal. There is a slight swelling of the arms during attacks, together with a feeling that they are swollen. Attacks are much worse just before the menstrual periods, growing worse until the flow begins. Lately there has been a gradual oncoming weakness of the hands and arms. The menses began when the patient was 13 and have been irregular ever since, coming at intervals of four or six weeks. Two years ago the patient was amenorrheic for six months. She has two young children living and has had no miscarriages. Appendectomy was performed at 12 years of age. Blood pressure, temperature, pulse and respiration are normal. Pelvic examination reveals a first degree retroversion. The family history is negative except for one brother, who is in an insane asylum. I have used ovarian and thyroid medication. The former at first seemed to lessen the numbness in the arms and hands. Am I right in thinking that this is an ovarian or other glandular deficiency and in further treating the patient along such lines? Could the retroversion be responsible and am I justified in correcting this surgically as a trial in relieving her of her peculiar symptoms? Thank you for your kind answer. Please omit name.

M.D., Minnesota.

ANSWER.—Exacerbation of pain in an old abdominal scar at the time of the menses could be due to adhesions involving one or the other ovary. This could, of course, be due to adhesions found either by direct examination or by pelvic roentgenography. The associated remote symptoms occurring at the time of the menses are apparently psychogenic in nature and in connection with the family history of one brother who is in an insane asylum would point to the possibility of a psychogenic disturbance in this patient. It is entirely unlikely that the paresthesias described are due to either ovarian or other glandular deficiency, although a basal metabolism determination should be made. It would be distinctly inadvisable to do a

surgical correction of a first degree retroversion, which is almost always movable. Temporary correction of this retroversion with a well fitted pessary would probably demonstrate that the retroversion has no bearing on the symptoms. This patient should have the benefit of an examination by a neurologist.

UNUSUAL PAIN IN TIBIA IN SYPHILITIC PATIENT

To the Editor:—A robust man, aged 25, otherwise in excellent physical condition, contracted a typical chancre on the penis about sixteen months ago but did not have treatment until a generalized papillary skin eruption appeared. The Wassermann and Kahn tests at this time were four plus. He had mucous patches on the glans, as well as dull headache and various other aches and pains throughout the joints. His schedule of treatment has included weekly injections of 0.6 Gm. of nearsphenamine and a bismuth preparation in olive oil injected on the same day, for twenty weeks, at the end of which time the Wassermann and Kahn tests were both negative. Following a rest period of about two months, during which time he seemed in perfect health, both tibias began to ache and were tender. No Wassermann or Kahn tests were done at this time, but weekly injections of nearsphenamine (0.6 Gm.) cleared up the tibia symptoms in about three weeks, although ten injections were given. Following these ten injections of nearsphenamine, the bismuth preparation in olive oil was injected weekly for ten doses, but about two weeks after cessation of the nearsphenamine injections, but while he was still receiving the bismuth preparation, the aching and tenderness in both tibias recommenced and became so severe as to prevent sleep, and nearsphenamine again cleared up these symptoms. In short, while the patient is receiving weekly injections of nearsphenamine (0.6 Gm.) the tibias remain satisfactory, but if such treatment is missed for two or three weeks the tibias commence paining again. Different preparations of bismuth have been tried but none will control the symptoms, nor will injections of mercury. Iodides were tried but caused considerable skin eruption. I have used the bismuth preparation for several years and always previously had excellent results with it—almost as rapidly as with nearsphenamine. So far, the patient has had about fifty injections of nearsphenamine and about twenty-five injections of the bismuth preparation, but so far as clinical signs are concerned the nearsphenamine is the only one that does any good. Should I continue the nearsphenamine indefinitely? Please omit name.

M.D., Ohio.

ANSWER.—It would seem that the wise procedure in the case of this young man would be an effort at more exact diagnosis of the cause of the tibial pain rather than the too easy conclusion that because he has syphilis and nearsphenamine gives relief the syphilis is the cause of the symptoms. Like all the arsphenamines, nearsphenamine is capable of exerting a definite nonspecific effect in inflammatory processes and the treatment for syphilis is well known to have nonspecific effect on tibial periostitis that is not syphilitic in origin. The case as described contains no statement in regard to palpable or visible abnormalities of the affected bones and no mention of roentgenologic examination. It would seem quite inexcusable to continue indefinitely the administration of nearsphenamine until something more nearly approximating a use of all available diagnostic facilities has been achieved. It is not inconceivable, of course, that the patient presents a treatment-resistant syphilis in which either the bismuth or the nearsphenamine factor is therapeutically inadequate or ineffective.

GROWTH AND DEVELOPMENT OF CELLS

To the Editor:—Zoologists have shown that reproductive cells, such as the sperm, may be injured by physical and chemical agents (chemical preconceptives) so as to permit them still to retain their fertilizing power, though impairing their function to such an extent as to give rise to unhealthy and even monstrous offspring or to individuals who though otherwise apparently healthy, are deficient in fecundity and are even sterile. Is this statement true?

H. C., New York.

ANSWER.—Prof. Charles R. Stockard of Cornell University has shown that subjecting the fertilized egg to various injurious influences (various poisons or abnormal salt concentrations) in amounts that do not kill the fertilized egg may result in the development of embryos having a variety of defects. Most of these defects usually lead to the death of the embryo sooner or later, but some of them may be compatible with life, with the artificial care of the experimental laboratory. Some of Professor Stockard's work was done on fish. Much work has also been done on the fertilized eggs of the invertebrates, notably starfish and sea urchins, largely with the view of determining at what stage in development the embryo is most susceptible to injurious physical and chemical agents. There is also report of work with the injection of various poisons into the developing chick embryo.

In general, these experiments show variations in susceptibility of the developing embryo to these poisonous agents at different ages of the embryo. The unfertilized egg and the sperm of lower animals have been subjected to the action of radium, x-rays and ultraviolet rays, and development followed on subsequent fertilization. Work of this kind indicates that it is possible by these means to injure the unfertilized eggs or the

sperm so as to show defects in the embryo, without destroying the power of fertilization. But as a rule when the unfertilized egg or the sperm is subjected to injurious chemical influences, the power of fertilization or union of sperm and egg is also lost. All this work by experimental zoologists has been done on the invertebrates and on the lower vertebrates. This literature is reviewed by Joseph Needham in "Chemical Embryology" (New York, Macmillan Company, 1931, vol. 3, p. 1382).

The weight of the question raised is, of course, whether there is any possibility of danger in chemical contraceptives not sufficiently strong to destroy fertilizing power but sufficiently injurious to render the embryo defective. The investigations on the lower forms do not permit a definite answer to this question for man. It must be assumed, of course, that such contraceptives are weak enough not to injure seriously the mucous membrane of the genital tract. Furthermore, one must take into consideration the relatively short period that such solutions remain in contact with the ovum and sperm, or with the fertilized ovum in the early stages of fertilization. Marked injury by chemical means either to ovum or to sperm before fertilization seems to destroy fertilizing power quite readily. When serious injury is done to the ovum, sperm or embryo in the early stages of development, early death of the embryo is the usual consequence.

The question raised requires much further investigation for its answer.

LACTOSE IN DIABETIC DIET

To the Editor:—I wish to know whether lactose is a suitable food for diabetic patients. In replying, please go into detail as to why it is or is not suitable and compare it as a food for diabetic patients with other carbohydrates, such as sucrose and dextrose.

R. W. BELL, Washington, D. C.

ANSWER.—Lactose is a disaccharide which is split up in the body into two simpler carbohydrates, dextrose and galactose. Sucrose is also a disaccharide. In the body it gives rise to two simpler carbohydrates; namely, dextrose and levulose. Although there is a certain amount of literature showing different rates of assimilability between sucrose and lactose, for practical purposes in the treatment of diabetes they must be considered as of identical value. Lactose could replace an equivalent amount of sucrose in the diet, and in figuring a diabetic diet on the basis of any of the known formulas it would have to be calculated as 100 per cent dextrose.

CHRONIC PRIAPISM

To the Editor:—Please suggest treatment for priapism in a man, aged 50, who suffers from this condition every night. His history is good. He has had all the laboratory examinations, which seem to lead nowhere. Please omit name.

M.D., New Jersey.

ANSWER.—In the absence of leukemia and syphilis, one must also consider the possibility of a cerebrospinal condition.

Conservative measures might first be tried on the theory that there may be some local irritation present either in the prostate or in the prostatic urethra. The prostate should be gently massaged every five days with, at the same time, instillations of weak silver nitrate solutions (from 1:3,000 to 1:500) into the prostatic urethra. If the urethroscope shows a markedly enlarged verumontanum, a direct application of 5 per cent silver nitrate should be made to that part.

In case these milder measures do not succeed, one may resort to epidural injections of procaine hydrochloride in saline solutions.

WORMS IN DEAD BODIES

To the Editor:—This may give M.D., Texas, whose query appeared in THE JOURNAL, February 18, a little added information about worms in buried bodies. It is the custom among the Chinese to exhume the skeletons of their deceased ones after about five to ten years of burial. I have witnessed quite a number of these. Although I have never seen any live worms, I must admit that I have seen that the skeletons in every case, and especially the heads when the hair still adhered to the skull, were packed closely with what appeared to be the coverings or skins of maggot-like worms. These skeletons are the remains of bodies that were embalmed before burial. Please omit name.

M.D., Hawaii.

"CONTRAINDICATIONS TO SPINAL PUNCTURE"

To the Editor:—In the answer to the query on this subject in THE JOURNAL, March 25, page 989, it seems to me that there has been an important omission made in the list of contraindications to spinal puncture. The omission is "that a spinal puncture should never be done in the presence of an untreated acute syphilis because at that time the blood stream is filled with spirochetes and there is considerable possibility of artificially creating a neural syphilis" (Stokes: Modern Clinical Syphilology, 1926, p. 527).

JOHN R. BRAXTON, M.D., Indianapolis.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Milwaukee, June 12. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The general oral, clinical and pathological examination will be held in Milwaukee, June 13. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Milwaukee, June 12. Sec., Dr. W. P. Wberry, 1500 Medical Arts Bldg., Omaha.

ARKANSAS: Basic Science. Little Rock, May 1. Sec., Mr. Louis E. Gehauer, 1002 Donoghue Bldg., Little Rock. Regular. Little Rock, May 9-10. Sec., Dr. Sam J. Albright, Box 54, Searcy. Eclectic. Little Rock, May 9. Sec., Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith. Homeopathic. Little Rock, May 9. Sec., Dr. Allison A. Pringle, Eureka Springs.

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. The examinations will be held at centers where there are five or more candidates, May 8-10, June 26-28, and Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: Basic Science. Omaha, May 2-3. Dir., Mrs. Clark Perkins, State House, Lincoln.

NEVADA: Carson City, May 1. Sec., Dr. Edward E. Hamer, Carson City.

WISCONSIN: Basic Science. Milwaukee, June 17. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. Regular. Milwaukee, June 27-29. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.

Missouri Reciprocity and Endorsement Report

Dr. James Stewart, secretary, State Board of Health of Missouri, reports 52 physicians licensed by reciprocity with other states and 13 physicians licensed by endorsement during 1932. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine.....	(1930),	(1931)	Arkansas
University of Colorado School of Medicine.....	(1931)	(1931)	Mississippi
Howard University College of Medicine.....	(1928)	(1928)	Tennessee
Emory University School of Medicine.....	(1928)	(1928)	Georgia
Bennett Medical College, Chicago.....	(1914)	(1914)	Iowa
Chicago College of Medicine and Surgery.....	(1912)	(1912)	Illinois
Loyola University School of Medicine.....	(1922)	(1922)	Illinois
Northwestern University Medical School.....	(1927)	(1927)	Illinois,
(1926), (1931) Kansas, (1932) Iowa			
Rush Medical College.....	(1921)	(1921)	Illinois
University of Illinois College of Medicine.....	(1931)	(1931)	Illinois
Keokuk Medical College, Coll. of P. & S., Iowa.....	(1906)	(1906)	Iowa
University of Kansas School of Medicine.....	(1927),	(1927)	
(1928), (1930, 2), (1931, 6) Kansas			
Tulane University of Louisiana School of Medicine..	(1923)	(1923)	Arkansas,
(1928) Louisiana			
Tulane University Medical Department.....	(1912)	(1912)	Oklahoma
Baltimore Medical College.....	(1894)	(1894)	Maryland
University of Michigan Medical School.....	(1930), (1931)	(1930), (1931)	Michigan
Ensworth Medical College, Missouri.....	(1905)	(1905)	Kansas
.. of Med.....	(1927)	(1927)	Illinois, Michigan
.. of Medicine.....	(1931)	(1931)	Kansas
.. of Medicine.....	(1925)	(1925)	Nehraska
.. Med.....	(1928), (1930), (1931)	(1928), (1930), (1931)	Minnesota
.. Philadelphia.....	(1929)	(1929)	Oklahoma
.. College.....	(1900)	(1900)	Illinois
.. School of Medicine.....	(1927)	(1927)	Ohio
Meharry Medical College.....	(1924), (1931, 3)	(1924), (1931, 3)	Tennessee
University of Tenn.....	(1931, 3)	(1931, 3)	Tennessee
University of Wes.....	nd	nd	
.. Surgery.....	(1915)	(1915)	N. Carolina
University of Virginia Department of Medicine.....	(1926)	(1926)	Virginia

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
University of Arkansas School of Medicine.....	(1931)	(1931)	N. B. M. Ex.
Rush Medical College.....	(1929)	(1929)	N. B. M. Ex.
Johns Ho.....	(1925)	(1925)	N. B. M. Ex.
Harvard.....	(1930)	(1930)	N. B. M. Ex.
Washington.....	(1929), (1931), (1932)	(1929), (1931), (1932)	N. B. M. Ex.
Columbia.....	(1929)	(1929)	N. B. M. Ex.
Ohio State University College of Medicine.....	(1937)	(1937)	N. B. M. Ex.
Jefferson Medical College of Philadelphia.....	(1929)	(1929)	N. B. M. Ex.
University of Pennsylvania School of Medicine.....	(1930)	(1930)	N. B. M. Ex.

Pennsylvania Reciprocity Report

Mr. Charles D. Koch, secretary, Pennsylvania State Board of Medical Education and Licensure, reports 3 physicians licensed by reciprocity with other states and four physicians licensed by endorsement from Aug. 26 to Nov. 30, 1932. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Indiana University School of			Indiana
Cornell University Medical			New York
Syracuse University College			New York

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Boston University School of			N. B. M. Ex.
Harvard University Medical			N. B. M. Ex.
Columbia University College			N. B. M. Ex.
Woman's Medical College of			N. B. M. Ex.

Book Notices

The Child and the Tuberculosis Problem. By J. Arthur Myers, Ph.D., M.D., F.A.C.P., Professor of Preventive Medicine, University of Minnesota. With an Introduction by William P. Shepard, M.D., F.A.P.H.A., Welfare Director, Western Division, Metropolitan Life Insurance Company. Cloth. Price, \$3. Pp. 230, with 21 illustrations. Springfield, Ill.: Charles C. Thomas, 1932.

This small volume, although intended for parents and the public, may be highly recommended for public health officers, nurses, social service workers, and even general practitioners of medicine. It is a high grade primer on childhood tuberculosis. A pointed summary at the end of each chapter, pertinent case histories, and vividly depicted black and white silhouette illustrations of family infections of tuberculosis all serve well for emphasis. There are few people who have followed childhood infection over a longer period than Dr. Myers, and for this reason he is amply experienced to discuss the epidemiologic and clinical aspects of the disease in children or the relation of the child to the tuberculosis problem. Although certain statements may not conform to recent developments in the bacteriology, pathology and pathogenesis of tuberculosis, and certain conclusions concerning controversial subjects may be premature, the chief message of guarding the young from infection and caring for those already infected is sound doctrine and one that should be accorded the fullest support. Even the controversial material is bound to stir up constructive discussion, whether it ultimately proves correct or not. The tuberculosis problem of childhood is traced from the sources of infection, routes and portals in different ages, and the control of such infections is discussed. The finding of tuberculosis has been facilitated greatly by the tuberculin test (Mantoux) followed by a roentgen study. The proper disposal and care of patients is outlined. The various "strongholds" of tuberculous infection (in animals, families and so on) are listed and the means of eradication of these strongholds is suggested. The work closes with the means of prevention of tuberculosis in nontuberculous children and the program for the future. The binding, printing and illustrations are of the best quality. This book will do valuable service in focusing the attention on the main issues in the struggle against tuberculosis.

Die Arbeitsbehandlung: Zur Reform der Lungenheilstätten. Von Prof. Dr. Hanns Alexander, Chefarzt des Sanatoriums Agra, und Kurt Alexander, Volkswirt. Boards. Price, 5 marks. Pp. 100, with 44 illustrations. Leipzig: Georg Thieme, 1932.

In a foreword to this little book the Alexanders state that with the exception of two sanatoriums little has been done in Germany in regard to work therapy for the tuberculous. In other countries, such as England, Holland and Switzerland, work therapy has made great strides. The purpose of the book is to bring to the German reader the efforts so far made in Germany, Holland and Switzerland. Credit is given Varrier Jones of England for his establishment of the tuberculosis colony at Papworth. The Alexanders expect to consider later the work in other countries. A special chapter is given describing the development of work therapy in their own middle class sanatorium at Agra. The original work therapy of Patterson of moving piles of sand from one place to another is considered to have led into a blind alley, having had no economic value. The Alexanders distinguish occupational therapy from work therapy. The former is of psychic value to divert the patient during a long rest regimen. The latter not only has psychic value but leads to immediate and lasting economic values. Work therapy is the antidote to the invalid atmosphere so graphically described in *The Magic Mountain* of Thomas Mann. The point is stressed that first the right instructor and then the proper work for each patient must be found. In some institutions, after about fourteen weeks of intensive rest, the patient engages in work suitable to his taste and to his condition, beginning with one hour a day. In others, some occupation is begun, such as typewriting, while the patient is in the treatment chair. If improvement takes place, light handwork is undertaken, and lastly some occupation around the sanatorium is given. Institutions vary in the general work undertaken. One, for instance, will specialize on toy making

and another on making coils for the telephone industry. The Agra institution advertises for contracts for translating books, indexing books, arranging directories, designing, correcting manuscripts, book binding, and similar work. A list is given of twelve institutions in which work therapy, from agriculture to the use of machinery, is described. Some institutions are able to finance their patients by loans to help their expenses until they can be more productive. About twenty-five pages is devoted to illustrations and on each of these appear eight pictures depicting the various phases of work employed. The efforts of these medical directors is to make their institutions industrial. There can be little doubt that, as Homer indicated, "too much rest itself becomes a pain." Yet tuberculosis is such a relapsing disease that in general more than a year of complete rest is necessary to lay the foundations for recovery. The average length of stay in the institutions described would appear to be not more than a year. While the patients are checked by physical, roentgenologic and blood examinations in regard to their ability to undertake work therapy, many must relapse under such treatment. No figures are given in regard to percentage of recoveries, or comparisons with sanatoriums in which work therapy is not prescribed. There can be no doubt regarding the psychic value of work therapy. The principle of Varrier Jones in taking patients who have first passed through sanatoriums to the Papworth colony, which is to a certain degree an industrial center, would seem to be well worth following.

British Experience With Unemployment Insurance: A Summary of Evidence Taken by the Royal Commission on Unemployment Insurance. Part 3: The Provisions of the Acts (Scope, Contributions and Benefits, and Conditions for Benefits). Monograph 9 in a Series on Social Insurance. Paper. Pp. 78. New York: Metropolitan Life Insurance Company, [1932].

The growth of British unemployment insurance is traced from the limited act of 1911 covering a little more than 2,000,000 workers with total weekly contributions in the highest class of about 15 cents and with merely assistance relief to the present one covering all earning less than about \$1,200 a year, with the exception of a few special classes. These various extensions were urged by nearly all the parties involved except some employers. This scheme grew out of a voluntary system of union benefits and at first the restrictions limited the benefit to \$1.70 a week, to fifteen weeks in any twelve months, and no individual could draw more than one week's benefit for any five contributions paid. The depression and continuous demands for further relief caused the expansion of various phases of the scheme and required heavy contributions from taxation. The efforts of certain provisions to stabilize employment are admitted to have failed in their purpose. The latest developments arising out of the recent royal commission report have been the introduction of the "means test" and a sharper enforcement of all restrictions. At the present time the Trade Union Congress is demanding a noncontributory scheme, and all the organizations representing the excluded industries, the most important of which are agriculture, domestic and government service and certain railroad employees, are demanding inclusion. The latest royal commission is divided, the majority insisting on economies and the minority on the necessity of at least maintaining the standards of relief previously existing.

Le rhumatisme articulaire aigu tuberculeux. Par le Docteur Jean Weill. Paper. Pp. 228. Paris: Librairie Le François, 1932.

The term "tuberculous rheumatism" was first popularized by Poncet of Lyons in 1897. He included, however, in this group chronic as well as acute cases, while Bouillaud and his school have described an acute polyarthritis or tuberculous rheumatism. The author of this book has made an extensive review of the literature, in which he has found considerable evidence to support the theory that many cases which in this country are called proliferative arthritis or, in young children, Still's disease may be allergic manifestations secondary to a tuberculous lesion elsewhere in the body. Dr. Weill has discussed the subject of acute articular tuberculous rheumatism from the standpoint of etiology, symptoms, clinical forms (which are listed as primary tuberculous rheumatism, arthralgias and secondary tuberculous rheumatism) and cardiac complications. Diagnoses in most instances were made on a basis of clinical observations. In some of the cases, however, fluid

was obtained from the involved joints and when tested by guinea-pig inoculation, after successive transmissions of lymph gland material from one guinea-pig to another, typical tuberculous lesions were obtained. Sixty-one case reports are included in the text. American readers will be surprised at the number of cardiac complications reported associated with this tuberculous rheumatism. The author has attempted to grow cultures of the organism from the blood and to transmit the disease to guinea-pigs by injection of the blood from such patients into guinea-pigs, with little success. Attempts were made to produce acute tuberculous rheumatism by injecting guinea-pigs and rabbits intravenously with emulsions of the tubercle bacilli. Only in rare instances were the joints involved. The author then attempted to sensitize certain joints by the injection of tuberculin into them and found that this procedure seemed to predispose these joints to infection by the tubercle bacilli circulating in the blood stream. After reading this book one is inclined to feel that not enough surgical and pathologic examinations of the tissues from joints affected by this so-called acute tuberculous articular rheumatism were made. Illustrations, particularly demonstrating the histopathology, would add to the value of this textbook as a reference work. American physicians interested in the subject of tuberculosis, and particularly those who are making a special study of various forms of arthritis, will find much in the book to stimulate their interest.

Management of the Sick Infant. By Langley Porter, B.S., M.D., M.R.C.S., Professor of Clinical Pediatrics, University of California Medical School, and William E. Carter, M.D., Instructor in Pediatrics; Chief, Pediatric Out-Patient Department, University of California Medical School. Fourth edition. Cloth. Price, \$8. Pp. 763, with 80 illustrations. St. Louis: C. V. Mosby Company, 1932.

Four editions of this book have appeared during the past ten years. The text has been particularly popular with general practitioners of medicine because of its organization and method of presentation. It is the only book that considers the sick infant exclusively. The first part of the book takes up the symptoms of disease as they are seen in infants. The second part is a consideration of disease by systems. The third division covers the methods of treatment used in diseases of infants, including formulas, recipes and drugs. The material is covered in a concise and clear manner. The clinical method of presentation features each discussion. It is a book that general practitioners will find most useful as a reference guide in intelligent care of the sick infant.

Skin Diseases and Nutrition Including the Dermatoses of Children. By Erlich Urbach, M.D., Dozent in Dermatology at the University of Vienna. Authorized English translation by Frederik Rehm Schmidt, A.B., M.D., Attending Dermatologist and Syphilologist, Alexian Brothers Hospital, Grant Hospital and United States Marine Hospital, Chicago. Cloth. Price, \$7. Pp. 242, with 55 illustrations. Vienna: Wilhelm Maudrich, 1932.

This book is a record of ten years' investigation in the scientific application of dietetics to diseases of the skin. Based on the classic studies of Luithlen, it emphasizes the necessity of a biologic and chemical study of the normal and diseased skin. In the first half of the book dermatoses are considered in relation to diet with chapters on skin diseases due to malnutrition, alimentary infections and intoxications, dysfunction or disease of the digestive tract, metabolic disturbances and nutritive idiosyncrasies. Of special interest are Urbach's original ideas on nutritive allergens and his methods of determining them with nutritional experiments and specific propeptans. The author holds that the normal cutaneous and intracutaneous methods of testing are worthless in many dermatoses and that only oral administration of suspected foods gives allergic results. The underlying principle of Urbach's technic is to allow the patient to eat only such foods as have a specific propeptan available and to take these three quarters of an hour before the meal. By omission of successive propeptans and consequent return of the symptoms, the offending allergen can be detected. Practical results were obtained in cases which the author classifies as alimentary idiosyncratic eczema, lichen urticatus, and a few other dermatoses. In the second half of the book various skin disorders are taken up alphabetically and suggestions for their dietetic treatment are made. In true neurodermatitis the author finds that skin tests are of real value in diagnosis and that treatment by intra-

dermal desensitization gives the best results. There is an excellent chapter on the Gerson-Sauerbruch and Hermannsdorfer salt-free, high-vitamin diets in the treatment of lupus vulgaris. A supplement contains some interesting food charts. Urbach's work is highly original, is based on some solid experimental and clinical evidence and must be given serious consideration in evaluating the modern trend in dietotherapy as applied to diseases of the skin. It represents an enormous amount of painstaking investigative work, both clinical and experimental. The literature pertaining to the relation of nutrition to diseases of the skin has been thoroughly covered. Only the future can decide whether Urbach's methods of treatment will supersede or merely supplement the more standard methods of dermatologic therapy. The translation of the book has been well done.

A Text-Book of Anatomy and Physiology. By Jesse Feirring Williams, M.D., Professor of Physical Education, Teachers College, Columbia University, New York City. Fourth edition. Cloth. Price, \$2.75. Pp. 601, with 416 illustrations. Philadelphia & London: W. B. Saunders Company, 1932.

This edition gives evidence of intensive revision. More space has been devoted to physiology without undue elaboration of experimental detail. The introduction of B.N.A. terminology is also an advance. The material is intended chiefly for students of the practical arts—nursing, physical education, physical therapy and occupational therapy. The author's extensive experience in teaching anatomy and physiology is reflected in the manner of presentation, choice of data and general organization. Basic and essential facts concerning structure and functions of the body are presented in a concise, orderly and logical sequence. Because the students for whom this textbook was intended usually do not have the benefit of dissection, the author has introduced numerous illustrations. The book is authoritative and especially well organized.

Physical Chemistry for Students of Biology and Medicine. By David Ingersoll Hitehecock, Ph.D., Associate Professor of Physiology in the Yale University School of Medicine. Cloth. Price, \$2.75. Pp. 182, with 26 illustrations. Springfield, Ill.: Charles C. Thomas, 1932.

The recent advances in our knowledge and conceptions of the nature of biologic processes, made with the aid of the quantitative methods of physical chemistry, have been striking. Unfortunately, however, few medical students are familiar enough with the fundamental principles of this science to be able to follow the progress made. For these, and for the practitioner who is anxious to keep in touch with the advances in the fundamental medical sciences, this book should prove especially valuable. The author hasn't attempted to cover the whole field of physical chemistry but has wisely restricted his material to those branches of the science which have been conspicuously successful in explaining biologic phenomena. How wisely he has chosen his material is best indicated by the subjects of some of the chapters, which include gases, solutions, electrolytes, hydrogen ions, indicators, buffers, electro-metric p_H , adsorption, the colloidal state, membrane equilibrium, equilibria in blood, reaction velocity and enzyme action, oxidation-reduction potentials, and transformations of energy. The subject matter is presented simply, with the aid of only the most elementary mathematics, which is used only where it is essential. There are many references to books and articles and a selected bibliography for the use of students who are especially interested in this field.

Photographischer Atlas der geburtshilflich-gynäkologischen mikroskopischen Diagnostik. Von Ludwig Franke, o. ö. Professor und Direktor der Universitäts-Frauenklinik in Breslau, und Erich Fels, Privatdozent und Leiter des Laboratoriums der Universitäts-Frauenklinik in Breslau. Cloth. Price, 10 marks. Pp. 28, with 132 illustrations. Berlin: S. Karger, 1933.

This is a handy booklet containing 123 photomicrographs of human gynecologic and obstetric specimens and 9 from mice. The enlargements vary from 7 to 130. A brief description accompanies the illustrations. The quality of the reproduction is good but not excellent according to German standards. The little book makes no great pretensions and ought to be a quick reference for diagnosing microscopically the commonest conditions encountered in the practice of gynecology and obstetrics.

Medicolegal**Employee Injured During Physical Examination***(Crawley v. General Motors Truck Corp. (Mich.), 244 N. W. 143)*

In the course of his employment, the plaintiff was struck by a falling timber and suffered an injury to his kidneys. He was awarded compensation for total disability for a period not to exceed 500 weeks. Two years after the accident, the employer, seeking evidence to support a petition to discontinue compensation, ordered the plaintiff to report to the defendant-physician for a physical examination. During the course of that examination, it was claimed, the defendant-physician punctured the plaintiff's urethra. In an action at law brought by the plaintiff against the employer and the physician, the employer made a motion to dismiss the action, contending that the plaintiff's injuries, if compensable, were compensable under the workmen's compensation act and that therefore he should have sought compensation in proceedings before the industrial board, not in an action at law. The motion was overruled and the employer appealed to the Supreme Court of Michigan.

To entitle the plaintiff, said the Supreme Court, to compensation under the workmen's compensation act, the injury must have arisen out of and in the course of his employment. The original injury did so arise. The second injury, the basis of the present suit, occurred two years after the plaintiff's employment had ceased. To bring it within the rule there must appear some causal connection between it and the first injury. In considering the right of an employee to recover for a subsequent injury, this court has held that the subsequent injury must be proximately traceable to the original injury. Here the injury complained of is in no way traceable to the original injury unless the court should adopt the defendant's argument that, if there had been no original injury, there would have been no examination and, if there had been no examination, there would have been no second injury. But, continued the court, that is not what the courts mean by the use of the word "traceable." When used in this connection it means that the second injury follows as a sequence and natural result of the original injury. There is not the slightest connection between the two injuries. The second injury was caused by the intervention of an independent agency producing results wholly unconnected from the original injury. It did not aggravate nor retard recovery from the original injury. It was a new injury having no connection with or effect whatsoever on the original injury.

The second injury did not occur while the defendant-physician was treating the plaintiff or rendering the medical and surgical services which the statute requires of the employer. If the second injury had resulted from treatment which the employer was required by the compensation act to render, a different situation might be presented. But here the injury resulted during an examination conducted for the benefit of the employer. The second injury is not attributable in any sense to the original injury and could not be compensated for under the compensation act as it did not arise out of or in the course of the plaintiff's employment. Therefore, the trial court did not err in refusing to grant the defendant's motion to dismiss the action.

Evidence: Admissibility of Roentgenogram for Purpose of Illustration.—The plaintiff sued for an injury to his knee received in an automobile collision. Medical experts differed as to the extent of the injury. To show the appearance of a knee which had been injured more severely than the plaintiff's, the trial court permitted the introduction in evidence of a roentgenogram of a knee of some person other than the plaintiff. The trial court, however, told the jury that the roentgenogram was not taken of the plaintiff and was introduced merely for the sake of illustration. Under the circumstances, said the Supreme Court of Washington, the trial court committed no error in admitting the roentgenogram in evidence. As was said in *Kelly v. Spokane*, 83 Wash. 55, 145 P. 57:

The practice of admitting photographs and models in evidence in all proper cases should be encouraged. Such evidence usually clarifies some issue and gives the jury and the court a clearer comprehension of the physical facts than can be obtained from the testimony of witnesses.

—*Norland v. Peterson (Wash.)*, 13 P. (2d) 483.

Society Proceedings**COMING MEETINGS**

- Alabama, Medical Association of the State of, Montgomery, April 18-21. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.
- American Association for the Study of Goltz, Memphis, Tenn., May 15-17. Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Ind., Secretary.
- American Association for the Study of the Feeble-Minded, Boston, May 31-June 3. Dr. Groves B. Smith, Beverly Farms, Godfrey, Ill., Secretary.
- American Association for Thoracic Surgery, Washington, D. C., May 9-11. Dr. Duff S. Allen, 3720 Washington Boulevard, St. Louis, Secretary.
- American Association of Genito-Urinary Surgeons, Washington, D. C., May 8-10. Dr. Henry L. Sanford, 1621 Euclid Avenue, Cleveland, Secretary.
- American Association of Pathologists and Bacteriologists, Washington, D. C., May 2-3. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.
- American Bronchoscopic Society, Washington, D. C., May 10. Dr. Edwin McGinnis, 104 South Michigan Boulevard, Chicago, Secretary.
- American Climatological and Clinical Association, Washington, D. C., May 9-10. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Massachusetts, Secretary.
- American Dermatological Association, Chicago, June 8-10. Dr. W. H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.
- American Gastro-Enterological Association, Washington, D. C., May 8-9. Dr. John Bryant, 311 Beacon Street, Boston, Acting Secretary.
- American Gynecological Society, Washington, D. C., May 8-10. Dr. Otto H. Schwarz, 630 South Kingshighway, St. Louis, Secretary.
- American Laryngological Association, Washington, D. C., May 9-10. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otolological Society, Chicago, June 8-10. Dr. Robert L. Loughran, 33 East 63d Street, New York, Secretary.
- American Neurological Association, Washington, D. C., May 9-11. Dr. Henry A. Riley, 117 East 72d Street, New York, Secretary.
- American Ophthalmological Society, Washington, D. C., May 8-10. Dr. J. Milton Griscom, 2213 Walnut Street, Philadelphia, Secretary.
- American Orthopedic Association, Washington, D. C., May 8-10. Dr. DeForest P. Willard, 1916 Spruce Street, Philadelphia, Secretary.
- American Otolological Society, Washington, D. C., May 8-9. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.
- American Pediatric Society, Washington, D. C., May 8-10. Dr. Hugh McCulloch, 325 North Euclid Avenue, St. Louis, Secretary.
- American Psychiatric Association, Boston, May 29-June 2. Dr. Clarence O. Cheney, 722 West 168th Street, New York, Secretary.
- American Society for Clinical Investigation, Washington, D. C., May 8. Dr. H. L. Blumgart, Beth Israel Hospital, Boston, Secretary.
- American Society of Clinical Pathologists, Milwaukee, June 9-12. Dr. A. S. Giordano, 531 North Main Street, South Bend, Ind., Secretary.
- American Surgical Association, Washington, D. C., May 8-10. Dr. Vernon C. David, 59 East Madison Street, Chicago, Secretary.
- Arizona State Medical Association, Tucson, April 20-22. Dr. D. F. Harbridge, 822 Professional Building, Phoenix, Secretary.
- Arkansas Medical Society, Hot Springs, May 2-4. Dr. William R. Bathurst, 213 West Second Street, Little Rock, Secretary.
- Association of American Physicians, Washington, D. C., May 9-10. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.
- California Medical Association, Del Monte, April 24-27. Dr. Emma W. Pope, 450 Sutter Street, San Francisco, Secretary.
- Conference of State and Provincial Health Authorities, Washington, D. C., June 5-6. Dr. A. J. Chesley, State Department of Health, St. Paul, Secretary.
- Congress of Physicians and Surgeons of North America, Washington, D. C., May 9-10. Dr. John T. King, Jr., 1210 Eutaw Place, Baltimore, Secretary.
- Connecticut State Medical Society, Hartford, May 24-25. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- District of Columbia, Medical Society of the, Washington, May 3. Dr. C. B. Conklin, 1718 M Street N. W., Washington, Secretary.
- Florida Medical Association, Hollywood, May 2-4. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.
- Georgia, Medical Association of, Macon, May 9-12. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.
- Illinois State Medical Society, Peoria, May 16-18. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.
- Iowa State Medical Society, Des Moines, May 10-12. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.
- Kansas Medical Society, Lawrence, May 2-4. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-26. Dr. Walter Dent Wise, 1211 Cathedral Street, Baltimore, Secretary.
- Massachusetts Medical Society, Boston, June 5-7. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.
- Minnesota State Medical Association, Rochester, May 22-24. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.
- Mississippi State Medical Association, Jackson, May 9-11. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Kansas City, May 1-4. Dr. E. J. Goodwin, 634 North Grand Boulevard, St. Louis, Secretary.
- Nebraska State Medical Association, Omaha, May 23-25. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.
- New Hampshire Medical Society, Manchester, May 16-17. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- New Jersey, Medical Society of, Atlantic City, June 6-9. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.
- North Carolina, Medical Society of the State of, Raleigh, April 17-19. Dr. L. B. McBrayer, Southern Pines, Secretary.
- Oklahoma State Medical Association, Oklahoma City, May 15-17. Dr. C. A. Thompson, Commercial National Bank Building, Muskogee, Secretary.

Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 167 Angell Street, Providence, Secretary.
Society for the Study of Asthma and Allied Conditions, Washington, D. C., May 6. Dr. W. C. Spain, 116 East 53d Street, New York, Secretary.
South Carolina Medical Association, Spartanburg, April 18-19. Dr. E. A. Hines, Seneca, Secretary.
South Dakota State Medical Association, Huron, May 15-17. Dr. John F. D. Cook, Langford, Secretary.
Texas, State Medical Association of, Fort Worth, May 8-11. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.
West Virginia State Medical Association, Charleston, May 22-24. Mr. Joe W. Savage, Professional Building, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

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- *Mediastinal Tumor in Acute Leukemia: Clinical and Roentgenologic Study. Jean V. Cooke, St. Louis.—p. 1153.
- Biologic Relationship Between Cow's, Goat's and Human Caseins. A. F. Anderson and O. M. Schloss, New York, and H. C. Stuart, Boston.—p. 1178.
- Relation of Measles and Tuberculosis in Young Children: Clinical and Roentgenographic Study. J. L. Kohn and H. Koiransky, New York.—p. 1187.
- Effect of Heat on Antigenic Properties of Milk. J. H. Lewis and Helen C. Hayden, Chicago.—p. 1211.
- *Soy Bean (Vegetable) Milk in Infant Feeding: Preliminary Report. F. R. Rittinger and L. H. Dembo, Cleveland.—p. 1221.
- Serum Proteins in Infancy and in Childhood: Effects of Malnutrition and of Acute and Chronic Infections on Serum Proteins in Infancy and in Childhood. C. H. Webb, Shreveport, La.—p. 1239.
- *Immunization Against Diphtheria with Toxoid, with Especial Reference to Time Interval and Size of Injections. P. B. Kreitz, Ann Arbor, Mich.—p. 1249.
- Modes of Cardiac Insufficiency in Children with Heart Disease. J. Levy, New Rochelle, N. Y.—p. 1259.
- Cyanosis in the New-Born. F. C. Hunt, New York.—p. 1268.

Mediastinal Tumor in Acute Leukemia.—Cooke reports the cases of nine boys with massive leukemic enlargements of the thymic region. In four, the clinical symptoms of pressure preceded the blood picture of acute leukemia, and in these cases irradiation with the roentgen rays produced relief from the respiratory distress. In three, the mediastinal tumor disappeared completely and permanently within a few days, although all died later of acute leukemia. It seems likely that such mediastinal involvement is more frequent in acute leukemia than is generally recognized, since the nine instances reported occurred in a series of thirty-eight cases. A review of the seventy-four cases reported in the literature and those reported by the author shows that the condition affects males almost six times as frequently as females, and that over 90 per cent have occurred in persons under 30 years of age. Although irradiation has usually produced a temporary beneficial effect on the mediastinal tumor if employed before blood changes were present, such irradiation by roentgen rays or radium afterward seems not only to be without benefit but in certain instances to have hastened the time of death. The author concludes that the study of the clinical and pathologic reports of the observed cases has given the impression that the mediastinal mass is the result of infiltration by leukemic cells carried there by the blood stream rather than a true neoplastic tumor arising *in situ*. Whatever its nature, the condition is sufficiently characteristic, as determined by modern methods of clinical examination, to be readily recognized and to merit consideration as a clinical entity in acute leukemia.

Soy Bean Milk in Infant Feeding.—Rittinger and Dembo made a preliminary study of fifty infants fed soy bean (vegetable) milk for over a period of a year. The progress in weight and the state of nutrition shown demonstrated that the soy bean, with the addition of sugars and various mineral

salts, can be made an adequate food for infants. The preparation used contained adequate amounts of the essential vitamins. The stool flora resembled that of the normal, breast fed baby. The economic features (mass production and low cost) are especially significant in a consideration of soy bean milk as an infant food. It compares favorably with the milk of animals from the standpoint of nutritional availability and biologic value. The authors have an additional 100 babies under observation on a diet of soy bean milk, either as a complement to breast milk or as an exclusive food. They will report their studies at a later date.

Immunization Against Diphtheria.—Kreitz gave eighty-six nurses and hospital employees two 1 cc. doses of commercial toxoid with seven days between injections. Immunity, measured by a negative Schick test, was acquired rapidly. One week after the second injection of toxoid, from 34 to 43 per cent of the subjects gave negative reactions; at two weeks, from 41 to 46 per cent; at three weeks, from 61 to 63 per cent; at four weeks, from 71 to 73 per cent, and at from fourteen to sixteen weeks, from 80 to 87 per cent. A single injection of 1.5 cc. of commercial toxoid did not give sufficient immunity to warrant its continued use in comparison with the immunity obtained by two injections of 1 cc. of toxoid at an interval of one week. The author presents a summary of other authors' results with toxoid immunization against diphtheria. These data tend to show that it is probable that a total dosage of at least 2 cc. of commercial toxoid is necessary for satisfactory immunization against diphtheria.

American Journal of Tropical Medicine, Baltimore

13: 1-140 (Jan.) 1933

- Studies on Pathogenesis of Neurotropic Yellow Fever Virus in Macacus Rhesus. W. Lloyd and H. A. Penha, Bahia, Brazil.—p. 1.
- Experimental Studies on Human and Primate Species of Strongyloides: I. Variability and Instability of Types. E. C. Faust and E. S. Kagy, New Orleans.—p. 47.
- Ganta Dispensary Patients: Statistical Study of Six Thousand Two Hundred and Ninety-One Consecutive Outpatients in Northeastern Liberia. G. W. Harley, Monrovia, Liberia, Africa.—p. 67.
- Behavior of Avian Malarials in Common Fowl, an Abnormal Host. R. D. Maxwell, Gothic, Colo.—p. 97.
- Differentiation of Flagellates of Genus *Leishmania* Ross, 1903, by Lytic Action of Specific Serums. F. da Fonseca, São Paulo, Brazil.—p. 113.

Archives of Internal Medicine, Chicago

50: 801-960 (Dec.) 1932

- *Decreased Dextrose Tolerance in Acute Infectious Diseases. J. L. Williams and G. F. Dick, Chicago.—p. 801.
- Asthma: XVI. Two Hundred and Thirteen "Cured" Patients Followed up Four Years Later. F. M. Rackemann, Boston.—p. 819.
- Hyperproteinemia Due to Bence-Jones Protein in Myelomatosis. J. W. Shirer, W. Duncan and R. L. Haden, Cleveland.—p. 829.
- *Maturing Effect of Roentgen Rays on Blood-Forming Cells. R. Isaacs, Ann Arbor, Mich.—p. 836.
- *Endemic Nutritional Edema: I. Clinical Findings and Dietary Studies. J. B. Youmans, A. Bell, Dorothy Donley and Helen Frank, Nashville, Tenn.—p. 843.
- Diffusible Calcium of Blood Stream: V. Influence of Agents Which Affect Blood Calcium on Calcium Distribution and Inorganic Phosphate of Serum. D. M. Greenberg and L. Gunther, with assistance of J. B. Dalton and W. E. Cohn, Berkeley, Calif.—p. 855.
- *Chemistry and Metabolism in Experimental Yellow Fever in Macacus Rhesus Monkeys: VI. Bromsulphalein Liver Function Test and van den Bergh Reaction. A. M. Wakeman and Clare A. Morrell, New York.—p. 876.
- *Thrombo-Angiitis Obliterans Among Women. B. T. Horton and G. E. Brown, Rochester, Minn.—p. 884.
- Mitotic Myelocytes in Peripheral Blood in Case of Myeloid Leukemia in Negro. H. Bowcock, Atlanta, Ga.—p. 908.
- Graphic Registration of Heart Sounds by Argon Glow Tube. A. G. Asher, Kansas City, Mo.—p. 913.
- Azolemia Due to Low Blood Pressure: Its Occurrence in an Unusual Case of Acute Rheumatic Fever. P. Shambaugh, Boston.—p. 921.
- Chronic Arthritis: Clinical Analysis of Three Hundred and Fifty Cases. M. Wetherby, Minneapolis.—p. 926.
- *Exogenous Tuberculous Infection of Adults: Marital Tuberculosis. E. L. Opie and F. M. McPhedran, Philadelphia.—p. 945.
- Normal Renal Threshold for Dextrose. R. A. Campbell, E. E. Osgood and H. D. Haskins, Portland, Ore.—p. 952.

Decreased Dextrose Tolerance.—Williams and Dick summarize the results of the dextrose tolerance test in 108 patients to whom 100 Gm. of dextrose in lemonade was given to adults and approximately 1 Gm. per pound of body weight to children. The study included 67 patients with scarlet fever, 17 with diphtheria, 8 with pneumonia, 5 with influenza, 3 with acute tonsillitis, 3 with measles, 1 each with erysipelas, encephalitis, mumps, epidemic meningitis and poliomyelitis, and 10 nor-

mal subjects. Glycosuria occurred in 41 per cent of patients with acute infectious diseases. The largest average amount of dextrose was excreted by the patients with influenza and miscellaneous acute infections. This glycosuria was accompanied by a lower carbohydrate tolerance, as shown by dextrose tolerance tests and blood sugar curves both in acute infectious diseases and in experimental infections in animals. Administration of insulin improved the dextrose tolerance in acute infections. The authors' work suggests that in infectious diseases there is often an injury to the islets of Langerhans with a lessened production of insulin.

Effect of Roentgen Rays on Blood-Forming Cells.—According to Isaacs, the effect of roentgen irradiation, in both small and large doses, on developing blood cells is stimulating, the result depending on the stage of development of the cells. Cells in the myeloblastic, lymphoblastic or a younger stage are stimulated to rapid reproduction, because of their growth potentiality at that stage, whereas cells in the myelocytic stage or the medium-sized lymphocytic stage are stimulated to grow through the rest of their life history in an orderly manner, because normally these cells do not divide and multiply. They die or are eliminated as normal senile cells. There is no evidence of a toxic necrotic action of the roentgen rays when applied in therapeutic doses. The process is hastened by larger doses, so that senility is reached more quickly, giving the impression of a "depressing" action. The period between the application of the roentgen rays and the time when the cells reach senility is the latent period. This corresponds to the time necessary for the cells to mature. The action of roentgen rays on living, blood-forming cells is one of stimulation to divide or to mature in a normal manner, and not one of toxic necrosis. Tissue cells that have a long adult life (muscle cells, nerve cells and fibrous tissue cells) appear resistant to roentgen rays, whereas those that have a short adult life (germ cells and leukocytes) die soon after they are "stimulated" to develop to senility. They all have the same susceptibility, but death follows at varying intervals, depending on how long the cells normally survive in their physiologic life.

Endemic Nutritional Edema.—Youmans and his associates present the clinical observations in a group of thirty-one patients whose principal complaint was a mild edema, apparently nutritional in nature. The diet of twelve of these patients was determined before the institution of treatment or experimental studies. In all but one, the total calories were below the basal requirements. The average protein intake ranged from 20 to 52 Gm. daily and was below the usual minimum (from 0.5 to 0.7 Gm. per kilogram) in all but four cases. The authors believe that the patients were suffering from a chronic dietary deficiency, particularly a shortage of protein, with an accompanying nutritional edema.

Yellow Fever in Monkeys.—Wakeman and Morrell believe that the rate of excretion of bromsulphalein dye by the liver is greatly diminished in yellow fever. In their study on forty-nine monkeys, an abnormally great retention of the dye by infected monkeys was observed in many cases several days before death. The onset of jaundice during yellow fever was manifested by an increase in the bilirubin content of the blood. The increased retention of bile pigment in the blood may begin several days before death. Increasing amounts of bile pigment in the blood and, more especially, abnormally slow removal of bromsulphalein dye from the blood were the first indications of loss of hepatic function in monkeys suffering from yellow fever. The authors present some evidence showing that the clotting time of blood is usually prolonged in yellow fever. The increased clotting time was associated with a lowered fibrinogen content of the blood. Monkeys dying of yellow fever did not excrete acetone in the urine. This fact supports the evidence that the liver is the chief site of acetone formation.

Thrombo-Angiitis Obliterans Among Women.—Further consideration of this disease, with its predilection for men, should be delayed until a larger number of women with complaints in the extremities have been examined. Horton and Brown are of the opinion that thrombo-angiitis obliterans has a higher incidence among women than is brought out by their study. The failure to recognize this is due probably to the facts that the disease is relatively mild among women and that

the diagnosis is overlooked. If this is a chronic infectious disease, as the work of Buerger and of Horton and Dorsey seems to indicate, no available explanation is at hand. The authors report seven cases of thrombo-angiitis obliterans from the literature and ten observed by them. The ages of their ten patients were 44, 43, 60, 71, 47, 28, 38, 38, 30 and 43. Four of the patients were treated by bilateral lumbar sympathetic ganglionectomy; one of these also had bilateral cervicothoracic sympathetic ganglionectomy. The right leg of one patient was amputated and the other patients were treated medically. The treatment, for the most part, has proved satisfactory.

Exogenous Tuberculous Infection of Adults.—The susceptibility of adults to the contagion of tuberculosis, a classic subject of controversy, is still under discussion. Many have maintained that the disease does not occur more frequently in adults conspicuously exposed to it than in the general population. Opie and McPhedran point out that, when roentgenographic methods are used for the recognition of tuberculous lesions of the lungs in husbands and wives in contact with a tuberculous mate, exogenous infection of adults is clearly demonstrable. Husbands and wives in marital contact with tuberculosis under varying conditions are infected from five to nine times as often as persons with no known contact with the disease; husbands are infected oftener than wives. In the authors' study of 533 couples, the frequency of infection in wives exposed to husbands with tubercle bacilli in the sputum was 35.5 per cent; in those exposed to husbands with no demonstrable tubercle bacilli, 22.9 per cent. The incidence of infection in husbands exposed to wives with open tuberculosis was 45.6 per cent and, when there were no tubercle bacilli in the sputum, 35.9 per cent. When the incidence of latent apical tuberculosis in persons exposed to tuberculosis in husband or wife is compared with that in husbands or wives with no known exposure to tuberculosis, the possibility that the difference has occurred by chance is negligible.

Canadian Public Health Journal, Toronto

23: 503-552 (Nov.) 1932

*Outbreak of Milk-Borne Typhoid Fever. F. S. Leeder, Pittsfield, Mass.—p. 503.

Importance and Value of Softening Municipal Water Supplies. R. E. Thompson, Toronto.—p. 507.

Treatment of Paralyzes of Poliomyelitis: Part I. General Principles: Part II. Some Details of Management of Early Cases: Part III. Some Organizations to Provide this Care. Jean Macnamara, Melbourne, Australia.—p. 517.

Infantile Paralysis in Vermont. Lillian E. Kron, Burlington, Vt.—p. 543.

Milk-Borne Typhoid.—Leeder definitely traced twenty-five cases of typhoid to a forty quart, inspected but unpasteurized, milk supply from a tuberculin tested herd. Three contact cases occurred among the nonimmunized members of the originally infected families. The attack rate was 40 per cent. There were two deaths, giving a case fatality rate of 7 per cent. A typhoid carrier was found among the milk handlers on the suspected farm. The outbreak occurred two weeks after a change in the usual routine of the carrier; i. e., a gastro-intestinal upset with diarrhea. The author concludes that, important as the tuberculin testing of cattle and the periodic analyses of milk samples are, particularly in assuring the production of clean milk from healthy cows—a milk fit to be pasteurized—they do not protect from milk-borne typhoid. To safeguard the public health and to assure the consumer of a good product, milk regulations should require that milk sold within a town be "from tuberculosis free herds, from inspected sources, of good quality and pasteurized."

Florida Medical Association Journal, Jacksonville

19: 233-268 (Dec.) 1932

Modern Treatment of Syphilis and Some of Its Complications. F. Wilson, Jacksonville.—p. 237.

Endocervicitis. W. J. Johnston, Sarasota.—p. 241.

Preoperative and Postoperative Treatment of Surgical Patients, Without Complications. Carol C. Webb, Pensacola.—p. 245.

Malaria Control Investigations. T. H. D. Griffiths, Jacksonville.—p. 249.

Avulsion of Phrenic Nerve: Report of Case. C. Anderson, Tampa.—p. 251.

Function of Newly Formed American Academy of Pediatrics. W. McKibben, Miami.—p. 252.

Should a Physician Treat Mouth Infections? J. H. Klock, Miami.—p. 254.

Journal of Biological Chemistry, Baltimore

98: 389-813 (Nov.) 1932. Partial Index

- Determination of Iodine in Blood, Foods and Urine. E. J. Baumann and Nannette Metzger, with the cooperation of L. K. Baldauf, New York.—p. 405.
- Metabolism of Cystine and Methionine: Availability of Methionine in Supplementing Diet Deficient in Cystine. R. W. Jackson and R. J. Block, New Haven, Conn.—p. 465.
- Effects of Yeast Ingestion on Composition of Urine and Feces. H. B. Pierce, with assistance of D. D. Posson, V. du Vigneaud, C. A. Morrison, Z. du Vigneaud and M. S. Pierce, New York.—p. 509.
- Calcium and Phosphorus Content of Brain in Experimental Rickets and Tetany. A. F. Hess, J. Gross, Mildred Weinstock and Frieda S. Berliner, New York.—p. 625.
- Effect of Heat at Varying Concentrations of Hydrogen Ion on Vitamin B (B₁) in Protein-Free Milk. Nellie Halliday, with assistance of Veda Ellen Hiller, East Lansing, Mich.—p. 707.
- Spectrophotometric Studies: I. Spectrophotometric Constants for Common Hemoglobin Derivatives in Human, Dog and Rabbit Blood. D. L. Drabkin and J. H. Austin, Philadelphia.—p. 719.
- Preparation of Extracts of Anterior Pituitary-Like Substance of Urine of Pregnancy. P. A. Katzman and E. A. Doisy, St. Louis.—p. 739.
- Effect of Parathyroid Extract on Blood Magnesium. D. M. Greenberg and Myrtle A. Mackey, Berkeley, Calif.—p. 765.
- Irradiated Milk: Influence of Intensity and Character of Radiations on Antirachitic Potency. G. C. Supplee, Bainbridge, N. Y.; H. H. Beck and M. J. Dorcas, Cleveland.—p. 769.

Journal of Lab. and Clinical Medicine, St. Louis

18: 329-438 (Jan.) 1933

- *Pathogenic Yeasts and Yeastlike Organisms: Report of Case in Minnesota Simulating Coccidioid Granuloma. D. C. Beaver and E. D. Furrer, Rochester, Minn.—p. 329.
- Sulphemoglobinemia. J. C. Healy, Boston.—p. 348.
- Tartrate Metabolism: I. Grape Tartrates and Acid-Base Balance. O. B. Pratt and H. O. Swartout, Los Angeles.—p. 354.
- Id.: II. Mode of Action of Ingested Tartrates. O. B. Pratt and H. O. Swartout, Los Angeles.—p. 366.
- Study of Occurrence of Unfertilized Ascaris Eggs. A. E. Keller, Nashville, Tenn.—p. 371.
- Study of Fröhde's Test for Morphine. C. F. Poe and Pearl Surbrugg Stehley, Boulder, Colo.—p. 375.
- Local Immunization of Peritoneum by Use of Bacteriophage: Negative Report. T. B. Rice, Indianapolis.—p. 381.
- *Localized Areas of Ischemia on Hands. W. Marshall and C. White, Chicago.—p. 386.
- *Nonspecific Fixability of Guinea-Pig Serum with Bordet's Antigen. H. A. Austin, Rochester, N. Y.—p. 389.
- Specificity of Kahn Test in Malaria. C. R. Smith, Detroit.—p. 396.

Pathogenic Yeasts and Yeastlike Organisms.—Beaver and Furrer present in detail an unusual case of systemic infection due to yeastlike parasites. The case is of particular interest because of its organic localizations, which were cerebellar, pulmonary and subcutaneous (two small abscesses). Its clinical, etiologic and pathologic resemblance to coccidioid granuloma in a resident of Minnesota who had not recently traveled elsewhere is also noteworthy. In their case the organisms revealed dual processes of reproduction in the tissues, namely, by budding and sporulation, such as has been demonstrated by Ricketts, Stober, Montgomery, LeCount and Myers, and others. The authors partly review the literature on the subject of infections due to yeasts and yeastlike organisms. The review demonstrates that a close relationship exists between the various yeasts and yeastlike pathogens and the diseases which they cause, and that attempts to classify them without keeping this relationship in mind tends to confuse rather than clarify the subject. They present their observations of the necropsy examination. They could not determine the source of the infection in their case. No other cases were known in the locality from which the patient came. The primary lesion was possibly pulmonary, with lymphatic dissemination to the peribronchial lymph nodes, and hematogenous distributions to the cerebellum and cutaneous tissue.

Localized Areas of Ischemia.—Marshall and White describe two cases of multiform, small areas of transient ischemia, which are continually residual in the patients. These white macules resemble Bier's spots and the macules described by Tracy as "chronic vasoconstrictor spots." There was no evidence of the presence of associated pigment spots, nor was there any associated anemic dermatography present in their patients. It is believed that the spots occur in patients of a neurasthenic constitution. These patients showed a hyperactive nervous system manifested by sinus arrhythmia and insomnia. It is not the authors' belief that these macules are associated with neural disorders, as Tracy has stated. These multiform areas of localized ischemia on the hands are not uncommon,

although not described in any of the standard dermatologic textbooks. They may be easily confused with vitiligo.

Nonspecific Fixability of Guinea-Pig Serum.—Austin, in testing 400 guinea-pig serums, observed that at least one third were not suitable for use with Bordet's antigen, and, since the inclusion of unsuitable serums in the pooled complement gave rise to apparently nonspecific reactions with Bordet's antigen on spinal fluids, it is obvious that all guinea-pig serums should be subjected to a preliminary test for nonspecific fixability with Bordet's antigen, and only those serums which do not react with this antigen should be included in the pooled complement. The sex of the guinea-pig did not seem to be a factor in the quality of nonspecific fixability with Bordet's antigen, or of its variability in the same guinea-pig.

Journal of Thoracic Surgery, St. Louis

2: 115-228 (Dec.) 1932

- Surgical Treatment of Tuberculous Empyema. C. A. Hedblom, Chicago.—p. 115.
- *Tuberculous Pyopneumothorax with Pyogenic Infection. F. B. Berry, New York.—p. 139.
- Extrapleural Thoracoplasty in Presence of Pneumothorax or Hydrothorax: Necessity of Emptying Pleural Cavity and Method of Doing This. R. B. Beitman, Chicago.—p. 154.
- *Treatment of Chronic Empyema by Tidal Irrigation, Suction and Thoracoplasty. D. Hart, Durham, N. C.—p. 157.
- Concerning Nature and Function of Certain Afferent Pathways from Thoracic Viscera. P. Heinbecker, St. Louis.—p. 183.
- *Inhibition of Respiration as Factor in Pathogenesis of Postoperative Pulmonary Complications. H. A. Carlson, Minneapolis.—p. 196.
- Diagnosis of Bronchial Fistulas: Description of New Apparatus and Technic. R. B. Beitman, S. Perlow and D. J. Cohn, Chicago.—p. 213.

Tuberculous Pyopneumothorax with Pyogenic Infection.—Berry outlines the development of the treatment of cases of tuberculous pyopneumothorax with added pyogenic infection. Of the seventy-five patients whom he treated in various ways, forty-two are dead, a mortality of 54.6 per cent, and fifteen are cured, 20 per cent. Of the others, four are improved, four are unimproved, six are still under treatment and four have been lost from his follow up. The author recommends that conservative treatment with repeated aspirations and pleural lavage should be tried first in patients not having a patent bronchopleural fistula. If successful, oleothorax should be instituted or artificial pneumothorax resumed. Early thoracoplasty is the ultimate and safest procedure. If conservative treatment fails after a trial of a week or ten days, these closed cases should be treated like those with an open bronchial fistula. Thoracotomy should be performed, followed by extrapleural thoracoplasty as soon as the condition of the patient warrants it. The author describes the technic of a radical and extensive thoracoplasty in which the procedure is performed in two or more stages from above downward.

Treatment of Chronic Empyema.—Hart presents a method for treating chronic empyema by closing down the large cavity to a small size by irrigation and suction. The entire roof of the small remaining cavity is readily removed during one operation with little shock to the patient. The bacterial content of the cavity has been lowered so that the infection of the operative wound is less severe. The wound is left wide open, and with no overhanging, thick, fibrous edges there is less possibility of a persistent sinus. Large bronchial fistulas prevent tidal irrigation by the continuous outflow of air and pus through the thoracotomy tube. The continuous passage of air through the bronchial fistula prevents pus entering the bronchi and avoids irritation and cough. The tube in bronchial fistula cases should be inserted so that it passes through the chest wall above the fluid level, should lie within the chest along the chest wall or diaphragm, should extend to the most dependent part of the cavity, and should have all openings near the tip so that it will keep all pus aspirated. This leaves the bronchial fistula opening above the fluid level, and the cavity below the fistula level can be periodically washed out. The cavity which persists as the lung expands is more likely to be anterior, since the weight of the lung causes it to fall into a dependent position and become adherent there. The empyema cavity can be kept clean and absorption prevented by continuous irrigation. Surgical solution of chlorinated soda and from 1 to 2 per cent solution of acetic acid can be used to remove the redundant caseating granulation tissue. The patient must be watched closely for bleeding. The height of fluid above the level

of the thoracotomy wound must be counterbalanced by a corresponding amount of suction if leakage about the tube is to be prevented. The rate of expansion of the lung can be regulated by the amount of suction used. The lung can be actually compressed by the weight of the fluid if the tube is inserted near the upper level of the fluid. The tube should be inserted where it does not interfere with an extrapleural paravertebral or anterolateral thoracoplasty. Irrigation and suction can be continued during and after a thoracoplasty, which can be performed in an aseptic field, and primary healing can be obtained. This permits closure of the empyema cavity without expanding the infected lung, and avoids the severe sepsis that follows infection of a large, fresh operative wound. If a small cavity persists after every effort has been made to close it, the roof should be removed as in a chronic pyogenic empyema.

Inhibition of Respiration.—Carlson states that after abdominal operations there is a marked inhibition of abdominal (diaphragmatic) breathing, which is greatest after operations on the upper part of the abdomen. There is little or no inhibition of abdominal breathing after operations on other anatomic regions. An increased rate of respiration occurs after most operations. The amplitude of thoracic excursion is increased after most operations, including those of the abdomen. Vital capacity is definitely reduced after abdominal operations, thyroidectomies and operations involving the chest and diaphragm, but the reduction is most extreme after abdominal operations. The reduction of blowing pressure is almost identical with the reduction of the vital capacity, except after thoracoplasty. The inhibition of diaphragmatic breathing and decrease of vital capacity after operations is chiefly the result of a reflex protective mechanism. Inhibition of abdominal breathing leading to decreased ventilation of the lower lobes of the lungs is probably an important factor in the pathogenesis of postoperative pulmonary complications.

Maine Medical Journal, Portland

23:241-267 (Dec.) 1932

*Therapeutic Use of Glucose. L. H. Smith, Winterport.—p. 243.
The Anemias: Their Diagnosis and Treatment: Part II. I. Olef, Boston.—p. 246.

Therapeutic Use of Dextrose.—Smith believes that one of the best combatants for certain complications, the anhydremic shock dependent on simple loss of blood value, as in diabetes, and the toxemic shock dependent on cardiac or capillary paralysis of bacterial or protein origin, such as in pneumonia, is dextrose. The administration depends entirely on whether hospital facilities are offered or one is in the backwoods: if in a hospital, 1,000 cc. of a 5 to 10 per cent solution of dextrose; if on the outside, a more highly concentrated solution. In giving 200 cc. of a high concentration, the author has no concern except that it run freely and continuously. One of the difficulties encountered is that after a few injections all the good veins are thrombosed. If more than 500 cc. is given, not more than 500 cc. should be given in an hour. In using the lower concentrations and larger amounts of fluid, the dextrose is added to physiologic solution of sodium chloride. The average amount of dextrose for an adult is about 1 Gm. per kilogram of body weight, for the initial dose at least. Subsequent doses may be increased if desired. To give less than a therapeutic dose is a common mistake and accounts for some of the disappointments. Some of the other conditions that are benefited by its use are as an emergency food in cases of gastric ulcer with pyloric obstruction, marasmus, vomiting in pregnancy and insulin shock.

Medical Journal and Record, New York

127:1-44 (Jan. 4) 1933

Management of Patients Exhibiting Profound Undernutrition, Including Use of Insulin as Agent for Promotion of Appetite and Gain of Weight. L. F. Barker, Baltimore.—p. 1.
Headache. O. T. Osborne, New Haven, Conn.—p. 5.
Tuberculosis of Prostate Associated with Adenomatous Prostate. G. Greenberg, New York.—p. 6.
Meningococcus Meningitis Followed by Tuberculous Meningitis. M. Schuman, New York.—p. 8.
Relation Between Presence of Natural and Artificial Antibodies in Organism. S. M. Enaliev, Kazan State University, Russia.—p. 10.
Statistical Service Survey. N. F. Shambaugh, Long Beach, Calif., and G. B. Desparois, Los Angeles.—p. 13.

Minnesota Medicine, St. Paul

16:1-72 (Jan.) 1933

Primary Carcinoma of Lungs. E. J. Simons, Swanville.—p. 1.
Fracture Work in Small Community. B. J. Branton, Willmar.—p. 6.
Equipment Necessary for First Aid Treatment of Fractures. R. C. Webb, Minneapolis.—p. 8.
Subdiaphragmatic Abscess and Liver Abscess. W. G. Benjamin, Pipestone.—p. 11.
Gradual Decompression of Biliary System: Mechanical Factor in Post-operative Hemorrhage and Hepatic Insufficiency in Jaundiced Patients. J. Culligan, St. Paul.—p. 15.
*Anal Fistulas. L. A. Buie, Rochester.—p. 19.
Present Day Surgical Treatment of Carcinoma of Rectum and Rectosigmoid. F. W. Rankin, Rochester.—p. 23.
Sex Hormones. G. E. Hudson, Minneapolis.—p. 28.
Some Practical Aspects of Allergy. F. W. Gaarde, Rochester.—p. 32.
*Sciatic Syndrome. W. P. Gardner, St. Paul.—p. 36.
Unsuspected Syphilis Revealed by Routine Wassermann Test. C. R. Drake, Minneapolis.—p. 43.
Combination of Amytal with Ephedrine in Treatment of Asthma. M. W. Binger, Rochester.—p. 44.

Anal Fistulas.—Buie uses the term "anal fistula" to designate a discharging sinus or sinuses, with one or more openings in the anal canal and an opening or openings either on the external surface of the body or in an adjacent viscus, such as the vagina, bladder, urethra, uterus, prostate gland, seminal vesicles, or the bowel itself. He states that the primary opening will usually be found in an anal crypt and that the tendency to pass the margin where the crypts are situated and to look too high for the origin of the disorder are the chief reasons for failure to cure anal fistulas. The patient with an anal fistula usually does not consult a physician until after the abscess has formed and frequently until after it has ruptured. If induration without fluctuation is present, hot applications and such measures as are necessary to bring the abscess to a "head" should be used, after which it should be opened. The incision should be made in such a manner as to leave the secondary opening as large, if possible, as the cavity of the abscess. An iodoform gauze drain should be put in after the operation is completed. Before fistulectomy is performed, the cavity of the abscess should be permitted to heal until it is reduced in size and only a chronic fistulous tract remains. If the abscess is small, complete excision, including the anal crypt, may be possible. The abscess should be taken care of first and the fistula later. The preparation of the patient for operation is essentially the same as that for other rectal operations. In cases complicated by tuberculosis, treatment of anal fistulas should be surgical, even if the pulmonary lesion is severe. The patient should be relieved of the additional physical burden by a suitable operation.

Sciatic Syndrome.—The symptom complex generally called sciatica is not a clinical entity and should be referred to as the sciatic syndrome. Gardner classifies, on an etiologic basis, the four chief varieties of this syndrome: (1) that variety which is secondary to general disease or gross pressure, (2) true sciatic neuritis, (3) that variety which is due to myositis or fibromyositis, and (4) the type due to neurodermatitis. Rational treatment demands thorough study of each case, accurate classification if possible, and logical treatment of the causative factor whenever practicable. If thorough investigation shows the sciatic syndrome to be secondary to a general disease such as syphilis, diabetes or lead poisoning, treatment must be aimed at the primary causative factor in each individual case. Sacral epidural injection may be of great value in obtaining comfort for the patient while specific therapy is under way. In the treatment of sciatic neuritis, rest, heat and the relief of pain are indicated; this means rest in bed, preferably with the affected limb wrapped in sheet wool. Diathermy from the lumbosacral region to the toes gives a moderate heat throughout the course of the nerve and, along with galvanism, is of value in moderately severe and acute cases. In chronic cases, the injection of from 50 to 100 cc. of sterile physiologic solution of sodium chloride following immediately a preliminary injection of 2 cc. of a 2 per cent solution of procaine hydrochloride within the nerve sheath gives a good result in most cases. Injection may be made either at the level of the ischial tuberosity or in the middle of the buttock, where the nerve has just left the sacrosacral notch. When the sciatic syndrome is due to myositis or fibromyositis, physical therapy is the treatment of choice. In the subacute and chronic cases of this type the most likely underlying basis is focal infection, and all foci of infection must be adequately treated. In those

instances in which the sciatic syndrome has been produced by a neurodociitis due either to arthritis of the intervertebral foramina or to the less common cause, sprain and subluxation of the sacro-iliac or lumbosacral joints, the guiding principle is immobilization. In milder and recent cases, rest in bed, physical therapy and analgesics, with immobilization by adhesive plaster strapping, may suffice. In the more severe and less recent cases, more extensive procedures may be required.

Missouri State Medical Assn. Journal, St. Louis

30: 1-50 (Jan.) 1933

- Sinus Disease. E. S. Connell, Kansas City.—p. 1.
Mastoid Disease. S. Spencer, St. Louis.—p. 3.
Infective Sinus Thrombosis. W. E. Sauer, St. Louis.—p. 6.
Thymic Deaths. H. M. Gilkey, Kansas City.—p. 9.
Keratoses of Face and Hands: Differential Diagnosis Between Precancerous and Benign Keratoses. G. V. Stryker, St. Louis.—p. 15.
Modern Management of Acne Vulgaris. N. Tobias, St. Louis.—p. 17.
Precancerous Lesions of Skin. A. H. Conrad, St. Louis.—p. 21.
Cinchophen Poisoning: Fatal Case. E. T. Johnson, Kansas City.—p. 22.
Peripheral Burns: Their Pathology and Treatment. B. L. Myers, Kansas City.—p. 25.
Headaches of Ocular Origin. A. W. McAlester, Jr., Kansas City.—p. 30.
Bacteriologic Diagnosis of Diphtheria: Relation Between Morphology and Virulence of *Corynebacterium*. J. C. Willett, N. Nagle and C. L. Pfau, St. Louis.—p. 31.
Stovarsol in Treatment of Ocular Syphilis. W. M. James, St. Louis.—p. 33.

New England Journal of Medicine, Boston

207: 1125-1176 (Dec. 22) 1932

- Operative Evacuation of Small Intestine in Paralytic Stasis. D. Cheever, Boston.—p. 1125.
Oxygen and Carbon Dioxide Therapy. M. Saklad, Providence, R. I.—p. 1132.
Recommendations of Committee on Costs of Medical Care. C.-E. A. Winslow, New Haven, Conn.—p. 1138.
*Luminal in Controlling Restlessness from Sodium Amytal in Obstetrics: Review of Thirty-Nine Cases. N. S. Scarcello, Worcester, Mass.—p. 1142.
Severe Thallium Acetate Intoxication Caused by Use of a Depilatory Called "Koremlu": Report of Case. A. Rudy, Boston.—p. 1151.

207: 1177-1236 (Dec. 29) 1932

- Hereditary Hemorrhagic Telangiectasia: Report of Five Cases in Two Families. R. C. Larrabee, Boston, and D. Littman, Chelsea, Mass.—p. 1177.
Report on Undergraduate Teaching of Surgery. E. C. Cutler, Boston.—p. 1182.
Case of Intrathoracic Goiter. E. L. Young, Jr., Boston.—p. 1185.
Fungal Skin Disease and Allergy: Causal Relationship. J. L. Grund, Boston.—p. 1187.
Traumatic Bile Cyst of Liver. J. F. Curran and R. H. Goodale, Worcester, Mass.—p. 1192.
Present and Future Significance of Observations and Recommendations of Committee on Costs of Medical Care, from Physician's Point of View. L. F. Barker, Baltimore.—p. 1193.
Social Aspects of Poliomyelitis. Ellen Barbour, Lexington, Mass.—p. 1195.

Phenobarbital in Obstetrics.—Scarcello states that the chief drawback to the use of sodium amytal in obstetrics is the restlessness it produces. He used phenobarbital, another barbituric acid preparation, in thirty-nine patients to counteract this undesirable effect through its greater sedative action. Restlessness was found to be absent in thirty cases, marked in three, present to a moderate degree in five, and present to a slight degree in only one. Amnesia was complete in twenty-four patients, moderate or of fair degree in seven, absent in five, and of slight degree in three. Cooperation on the part of the patient was obtained in thirty-two cases, lacking in two, and present to a moderate degree in four. The method of administration varied with the individual case. Some of the observations noted were that (1) less nursing care was required; (2) only one patient developed a toxic rash that also appeared on the baby; (3) bladder distention to the point where catheterization was required was seen; (4) no harmful effects on the babies were noticed, and (5) labor apparently is prolonged by using phenobarbital, the average length of labor in his thirty-five primiparous patients being approximately thirteen hours and thirty minutes. When sedation did not take place within forty-five minutes to an hour after the initial dose, further medication was given. The size of the second dose depended on the progress of labor, the amount of restlessness, the severity of the pains, and the general condition of the patient. The same principles were followed in cases of prolonged labor in which more medication than usual was necessary. Usually, in these cases, a third and fourth dose had to be administered to obtain the desired results.

New York State Journal of Medicine, New York

32: 1341-1404 (Dec. 1) 1932

- Eod-Results in Hyperthyroidism. F. H. Lahey, Boston.—p. 1341.
Epidemiology of Septic Sore Throat. P. B. Brooks, Albany.—p. 1348.
Report of Septic Sore Throat Outbreak in Greenwich, Washington County, N. Y. W. L. Munson, Granville.—p. 1351.
Dog's Gift to Relief of Suffering. W. B. Cannon and C. K. Drinker, Boston.—p. 1354.
Objectives of Bronx County Medical Society. W. Klein, New York.—p. 1358.
Therapeutic Massage. K. G. Hansson, New York.—p. 1359.
Poliomyelitis: Plan for Study and After-Care of 1931 Brooklyn Epidemic. M. B. Gordon, Brooklyn.—p. 1362.
Clamp Tourniquet. H. Cohen, New York.—p. 1367.
Rubella. J. R. Graham, New York.—p. 1368.
Alopecia Associated with Hypothyroidism in Child. I. N. Kugelmass, New York.—p. 1371.

Oklahoma State Medical Assn. Journal, Muskogee

25: 495-534 (Dec.) 1932

- Acute Perforating Ulcers of Stomach and Duodenum. R. Fisher, Frederick.—p. 495.
The Gallbladder. W. E. Sistrunk, Dallas, Texas.—p. 499.
Eclampsia: Discussion of Its Medical and Surgical Treatment. G. R. Osborn, Tulsa.—p. 506.
The Physician, Leader in Mental Hygiene. J. J. Gable and J. L. Day, Norman.—p. 513.
Chronic Nonvalvular Heart Disease. W. Langston, Oklahoma City.—p. 515.

Public Health Reports, Washington, D. C.

47: 2297-2323 (Dec. 16) 1932

- Sickness Among Male Industrial Employees During the Third Quarter of 1932. D. K. Brundage.—p. 2297.

Texas State Journal of Medicine, Fort Worth

28: 583-656 (Jan.) 1933

- *Drugs in Treatment of Chronic Heart Disorders. G. W. Parson, Texarkana.—p. 590.
*Comparative Study of Gastric Analysis in Duodenal Ulcer and Gastric Malignancy. H. B. Willford, Beaumont.—p. 594.
*Necessity for Early Surgical Intervention in Acute Intestinal Obstruction: Survey of Forty-Eight Cases. L. W. Pollok, Temple.—p. 597.
Osteochondritis of Symphyseal Pubis Following Prostatectomy. F. L. Barnes, Houston.—p. 601.
Perforated Peptic Ulcer: Report of Few Cases. R. L. Ramey, El Paso.—p. 604.
Indications for Cesarean Section. J. E. Kanatser, Wichita Falls.—p. 607.
Instrumental Treatment of Prostatism. R. E. van Duzen, Dallas.—p. 611.
Massive Emphysema Following Tracheal Injury: Case. A. J. Streit, Amarillo.—p. 615.
Renal Tumors. R. T. Wilson, Temple.—p. 617.
Mastoiditis with Intracranial Symptoms: Case. E. F. Stroud, Corpus Christi.—p. 622.
Roentgen-Ray Findings in Heart Pathology. D. Spangler, Dallas.—p. 624.
Accuracy Methods in Cardiac Diagnosis. L. W. Kuser, Gainesville.—p. 629.
Health Activities in Lower Rio Grande Valley. W. E. Spivey, Brownsville.—p. 630.
Dilemma of Contract Practice. W. F. Starley, Galveston.—p. 633.

Heart Disease Therapy.—Parson states that the rational use of drugs in the treatment of heart disease is dependent on exact and comprehensive diagnosis. Before intelligent treatment can be applied it is necessary to determine the etiology, the pathologic lesion, the physiologic status and the functional capacity of the myocardium. Etiologically and pathologically, chronic organic heart diseases may be divided into the following five groups: hypertensive heart disease, arteriosclerotic heart disease, rheumatic heart disease, syphilitic heart disease, and a miscellaneous group composed of hyperthyroidism, obesity, emphysema, spinal deformity, and so on. When a given case of heart disease has been placed in one of these groups, one is in a position to apply more intelligent treatment than when the etiology and the pathologic lesion have not been determined. The etiology and the pathologic lesion determine the type of drug to use but they furnish no indication as to when the drug should be employed. The functional state of the myocardium is indicated by the presence or absence of the symptoms of heart failure under various conditions of rest and activity and by the presence or absence of any changes in the fundamental properties—irritability, rhythmicity, tonicity, conductivity and contractility, of the heart muscle. It is the functional state of the myocardium that determines when a drug should be administered. The mere presence of an ana-

tomic lesion does not call for the use of drugs. There are no drugs capable of affecting these morphologic changes. The drugs of most value in the treatment of heart disease are valuable chiefly because of their effect on the fundamental properties of heart muscle. The author concludes that digitalis is without effect on the etiologic agents or the anatomic lesions of heart disease. It is of therapeutic value because of its ability to modify certain properties of heart muscle. The value of quinidine in the treatment of heart disease has been demonstrated recently. Its beneficial effect, like that of digitalis, is dependent on its ability to influence certain properties of heart muscle. Irritability, conductivity and stimulus production are depressed and the refractory period is prolonged. The usefulness of xanthin and its derivatives is dependent on their dilating effect on the coronary arterioles and on their diuretic action. It has been shown that they are capable of increasing the coronary blood flow, in some instances as much as 90 per cent. Antisyphilitic drugs in general are applicable in the treatment of syphilitic heart disease. Diuretics have a definite place in the treatment of heart disease. Theophylline and allied drugs are frequently helpful. Amyl nitrite and glyceryl trinitrate afford prompt and complete relief in the individual attack of angina pectoris. Barium chloride is of value in the treatment of Adams-Stokes seizures occurring in complete heart block.

Gastric Analysis Studies.—According to Williford, all obtainable information relative to the particular case must be taken into consideration in order to evaluate the normality or pathologic variation of the gastric hydrochloric acid. Free acid is more often high in ulcer and low in carcinoma. The combined acid is more often low in ulcer and high in carcinoma. Lactic acid of the gastric content, excluding the sarcolactic acid of ingested meats, is fermentative in origin and its presence depends on a low acid or achlorhydria with gastric stasis or obstruction and the presence of the lactic acid forming bacterial flora. Blood is more often found in the gastric content in cases of gastric carcinoma. Mucus and bile have been found more frequently in association with gastric carcinoma. An intelligent interpretation of the gastric analysis will often materially assist in the differential diagnosis of gastric carcinoma and duodenal ulcer.

Intestinal Obstruction.—Pollok believes that the most important factor in the high mortality rate of acute intestinal obstruction is still, as it always has been, delayed operation. Early recognition of the symptoms and immediate operation will do much toward reducing mortality. The usual textbook descriptions apply only to the moribund patients. With such a patient, surgical intervention is too late. The most practical treatment for mechanical ileus is surgical intervention at the earliest possible moment. The preoperative administration of physiologic solution of sodium chloride and hypertonic solution of dextrose injected intravenously is an effective and indispensable supportive treatment and will frequently convert the bad surgical risk into a comparatively safe one. Routine postoperative administration is essential, also, to combat shock and to relieve dehydration and toxemia. Utmost gentleness and a minimum of handling in the operative procedure is required to prevent trauma and reduce mortality. In acute intestinal obstruction, spinal anesthesia is the anesthesia *par excellence*. It affords perfect abdominal relaxation, facilitating the ease and rapidity of relieving the obstruction. The author reports a series of forty-eight cases of acute intestinal obstruction which came to operation. In twenty-nine of these the obstruction was evidently contingent on previous operation for various abdominal troubles. There were fourteen deaths, a mortality of 29.2 per cent.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

40: 641-698 (Dec.) 1932

- Results of Operative Procedure on Stomach and Duodenum for Cure of Gastric and Duodenal Ulcer. L. P. Bell, Sacramento, Calif.—p. 641.
Recurrent Peptic Ulcer. V. C. Hunt, Los Angeles.—p. 648.
Intestinal Anastomosis Using Simplified Basting Stitch Method. D. V. Trueblood, Seattle.—p. 654.
Ulcer of Jejunum Following Gastro-Enterostomy: Case Treated by Conservative Operation. G. W. Nagel, San Francisco.—p. 659.
Case of Severe Gas Bacillus Infection with Good Clinical Result. D. H. Bessen and B. A. Gingold, Minneapolis.—p. 662.
Disturbed Protein Metabolism as Cause of Colloid Goiter in Dogs. J. S. Davis, Jr., J. W. Hinton and J. A. Killian, New York.—p. 665.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

45: 1-48 (Jan.) 1933

- Hospital and Vineyard Medicine. W. Dubreuilh.—p. 1.
Results of Intradermal Tests in Certain Dermatoses and Therapeutic Effect of Intradermal Vaccines. H. W. Barber and L. Forman.—p. 4.
Persistent Hypersensitivity to Light After Intravenous Injections of Trypaflavine. H. Haxthausen.—p. 16.
Circumscribed Myxedema Associated with Hyperthyroidism. J. T. Ingram.—p. 19.

British Medical Journal, London

2: 1177-1222 (Dec. 31) 1932

- *Significance of Electrocardiograms of Low Voltage Variety. M. A. Cassidy and H. B. Russell.—p. 1177.
Effect of Certain Physical Factors on Mental Capacity of School Children: Preliminary Report. J. Riddell.—p. 1180.
*Further Report on Tuberculin Treatment of Asthma. J. Maxwell.—p. 1182.
Temporary Visual Disturbance as Initial Symptom of Diabetes Mellitus. H. P. Himsworth.—p. 1184.
General Practitioner's Approach to Nervous or Mental Patients. C. M. Campbell.—p. 1186.
Some Points in Connection with Spinal Analgesia. E. F. Hill.—p. 1189.

Electrocardiograms of Low Voltage Variety.—Cassidy and Russell took electrocardiograms of 700 patients in an attempt to determine whether a low voltage curve has any clinical significance, and whether this significance (if existing) varies in any way according to the lead in which it occurs. They divided the 700 cases into three groups in which (1) the cardiovascular system, after full examination, had been passed as normal; (2) the electrocardiogram was normal in all other respects, although the heart was affected, and (3) the heart was affected, the electrocardiogram being abnormal in other respects. They observed that low voltage curves occurring only in lead I are found as commonly in electrocardiograms of normal hearts as of abnormal ones. It is obvious, therefore, that no especial significance can be placed on its occurrence alone. When, however, the electrocardiogram is abnormal in other respects its presence may have some slight significance, as it is a fact that a large percentage of such cases showed evidence of fairly gross muscle damage. With low voltage changes occurring in lead II, the authors state that: 1. Their first two groups, consisting of 251 cases, showed only one case coming into this category. Its presence, therefore, in an otherwise normal electrocardiogram would be unusual and possibly suggestive of muscle damage. 2. It occurs frequently in tracings showing left axis deviation. Here it cannot be considered either abnormal or having any special significance. 3. Associated with changes in the electrocardiogram other than left axis deviation, it must be considered to be abnormal and strongly to suggest myocardial damage. Low voltage curves occurring only in lead III were commonly found and cannot be regarded as having any especial significance. Low voltage changes occurring in all three leads were found in 1.75 per cent of the total electrocardiograms examined. In cases showing evidence of cardiovascular degeneration, the occurrence of such a tracing is significant and justifies a bad prognosis. Exceptions do occur, but the majority of these patients die in a comparatively short time. They conclude that it should be noted that low voltage curves (only in lead II or in all three leads) are particularly liable to occur in cases of cardiovascular degeneration, and their presence usually indicates a poor prognosis. The significance of such curves is of no great importance unless considered in conjunction with the other factors of the patient's case; if this is done, their occurrence may prove of great value in giving an accurate prognosis.

Tuberculin Treatment of Asthma.—Maxwell reports the results of a series of thirty-six cases of asthma that he treated by tuberculin in 1930 and records the present state of the patients. The present results are less encouraging than those previously reported, as there has been a tendency to relapse. He includes the cases that he treated, subsequently, up to and including 1931, bringing the total to 103. The method yields results which, although less promising than they appeared to be at first, are still sufficiently good to warrant a trial of tuberculin in all apparently suitable cases. The material that he used in all cases has been Koch's old tuberculin, which may be conveniently kept in decimal dilutions from 1:1,000 to

1:1,000,000. It is not necessary for the dilutions to be prepared immediately before use, as they keep well under ordinary conditions for at least a month. The initial dose is gaged by the response of the patient to the Mantoux test. One-tenth cubic centimeter of the 1:1,000 dilution is injected intradermally and the result is read after two or three days, attention being paid only to the area of swelling, for erythema is apparently of no significance. If there is no swelling, it is safe to begin the treatment with a subcutaneous injection of 0.1 cc. of the 1:1,000 dilution; if there is an area of swelling less than 1 cm. in its long axis, the initial dose should be 0.1 cc. of 1:10,000; if the area is between 1 and 2 cm. in its long axis, the initial dose should be 0.1 cc. of 1:100,000; and in cases in which the area of swelling exceeds 2 cm. in diameter the initial dose should not be greater than 0.1 cc. of the 1:1,000,000 dilution. In the early stages of treatment the interval between the injections should be two or three days. The interval between injections may be gradually increased, but weekly injections should be given for at least six months, after which, in the majority of cases, the treatment may be given fortnightly for a further period of six months. The injections may then be suspended for three months, but a further course of weekly and fortnightly injections should be given to bring the total period of treatment up to a minimum of two years.

Journal of Laryngology and Otology, Edinburgh

48:1-76 (Jan.) 1933

Tonsil Problem. O. Kahler.—p. 2.

Lancet, London

2:1417-1464 (Dec. 31) 1932

Biochemistry and Mental Disorder. J. H. Quastel.—p. 1417.
Radiographic Appearances of Lungs in Chronic Bronchitis and in Emphysema. J. V. Sparks and F. G. Wood.—p. 1419.

*Splenectomy and Thrombosis. A. G. Bryce.—p. 1423.
Pernicious Anemia, Following Gastrectomy and Splenectomy. C. C. Ungley.—p. 1426.

*Problem of Fluid Intake in Cardiac Edema. I. Harris and R. Mennie.—p. 1427.

*Surgical Emergencies Due to Meckel's Diverticulum, Illustrated by Six Cases. G. A. B. Walters and E. G. Wilkins.—p. 1430.
Anesthesia for Acute Intestinal Obstruction in General Practice. J. A. Robson.—p. 1432.

Thallium Poisoning: Two Cases. P. Ghalioungui.—p. 1433.
Gastrostomy for Carcinoma of Esophagus. H. Donovan.—p. 1434.

Splenectomy and Thrombosis.—Bryce states that the clinical and pathologic features of Banti's disease may be reproduced by several other diseases, and in particular by thrombophlebitis of the portal and splenic veins. There thus exists a condition, the clinical manifestations of which indicate splenectomy, in which thrombosis of the splenic vein exists before that operation is undertaken. Fatal thrombosis of the splenic and portal veins is a well recognized complication after splenectomy in Banti's and similar diseases. It is more likely to occur in patients with a normal or nearly normal platelet count, while a low count is held to point to a favorable outcome of the operation (Rosenthal). The author reports two cases: in the one with a low platelet count, fatal thrombosis ensued nine days after splenectomy. In the other, not such a clear-cut case of splenic anemia, the operation was safely surmounted in spite of an approximately normal thrombocyte count and the previous occurrence of systemic thromboses. Few observations can be found in the literature on the platelet content of the blood in splenic thrombophlebitis, and no figures are available to show whether or not in this condition the danger of post-operative thrombosis is increased. The author suggests that, in predisposed cases, postoperative thrombosis of the splenic vein may be rendered less likely if surgical intervention is limited to ligation of the splenic artery.

Fluid Intake in Cardiac Edema.—To determine the effect of excessive salt and fluid intake in patients with cardiac edema, Harris and Mennie put twenty-six patients on a standard diet for one week. The second week, a salt free diet and large quantities of fluid were given. In the third week, the same large quantities of fluid were given and 30 Gm. of salt daily. Some of the patients were put on a limited fluid intake (18 ounces daily) and a diet containing the ordinary amount of salt; later on, on a limited fluid and salt free diet. In others, a comparison was made between imbibition of large and small quantities of fluid, the patient remaining all the time under a salt free diet. In some cases the patient's condition did not

warrant the continuous administration of large quantities of salt and water or the patient refused to continue with the treatment. The following measurements were made: osmotic pressure of the serum, osmotic pressure of the colloids, hemoglobin and refractometer determinations, blood viscosity, alkali reserve and venous pressure. The osmotic pressure of the serum was determined by the Beckmann instrument. For the purpose of determining blood protein, the Abbé refractometer was used. The hemoglobin determination was made by means of the Klett colorimeter. For the renal efficiency tests, the authors found the dilution and concentration test in conjunction with osmotic pressure determinations the most reliable. The venous pressure was determined by means of a needle in the basilic vein which was connected to a water manometer. Hess's instrument was used for the determination of viscosity, and van Slyke's apparatus for the determination of alkali reserve. From their study the authors conclude that salt and water influence cardiac edema adversely and, if given in sufficiently large quantities, cause hydemia. The administration of large quantities of fluid without salt does not affect cardiac edema adversely but causes an increased concentration of the blood. An important factor in cardiac edema is an impaired renal secretion for salt. Factors connected with maintaining normal osmotic pressure are, in part at least, responsible for the causation of cardiac edema.

Surgical Emergencies Due to Meckel's Diverticulum.

—Walters and Wilkins report six cases of acute abdominal catastrophes caused by Meckel's diverticulum. All these cases occurred in males, five being between the ages of 15 and 27. Complications usually arise in children or young adults, and the sixth patient, aged 63, should be regarded as exceptional. In no instance could any history be elicited of previous symptoms that could be attributed to this condition. Acute intestinal obstruction was present in five of the six cases; in three of these the diverticulum was prolonged into a cord, which was attached to the mesentery and had ensnared the bowel. In one, the tip of the diverticulum had actually pierced the mesentery and was unable to retract owing to engorgement and swelling. It is difficult to visualize how this condition arose. In the patient aged 63, the obstruction was due to kinking of the ileum. In one case the diverticulum showed no obstruction of its lumen and no gangrene, yet perforation had occurred. The clear-cut edges resembled those of a perforated peptic ulcer, and it is probable that this was an example of misplaced gastric epithelium or gastric heterotopia. Cases of ulceration in Meckel's diverticulum terminating in perforation have been reported, a prominent symptom being repeated intestinal hemorrhage. More recently, Edwards has drawn attention to the clinical significance of heterotopia. The intestinal hemorrhage in the authors' case led to a mistaken diagnosis of intussusception. Unfortunately, the diverticulum was not examined microscopically. The high mortality associated with this condition is largely due to delay in operating, caused by errors in diagnosis. In their series there were two deaths. These cases were admitted about sixty hours and forty-eight hours, respectively, after the attacks began.

Medical Journal of Australia, Sydney

2:795-818 (Dec. 31) 1932

Medical Curriculum of the University of Sydney. C. G. Lambie and H. R. Dew.—p. 795.

Specificity of Urinary Proteose. R. S. Steel.—p. 800.

Early Treatment of Congenital Talipes. N. D. Royle.—p. 803.

Meningismus. J. M. Gill.—p. 805.

Quart. Bull., Health Org., League of Nations, Geneva

1:315-485 (Sept.) 1932

Medical Education in France. G. Roussy.—p. 315.

Journal of Oriental Medicine, South Manchuria

17:45-64 (Nov.) 1932

Therapy of Primary Syphilis, as Well as Other Stages of Syphilis, by Inoculation with Rat-Bite Fever. T. Iwakiri.—p. 45.

Multiple Sclerosis of Endocrine Glands: Case. U. Takei.—p. 57.

Antigenic Properties of Lipoids of Tubercle Bacilli: II. Specificity of Tubercle Bacilli. M. Yato.—p. 58.

Notes on Dysenteric Venation and Serum Albumin. N. Hoshi.—p. 59.

Influence of Radium on Tuberculous, Carcinomatous and Simple Erosions of Portio Vaginalis Uteri: III. Simple Erosion. M. Sasaki.—p. 60.

Saccharomycetes-Like Bodies in Human Lymph Nodes. E. Kitabatake.—p. 62.

Scarlet Fever Prophylaxis. S. Nishihori.—p. 64.

Paris Médical

1: 125-140 (March 11) 1933

First Lesson in Surgical Clinic. R. Grégoire.—p. 125.

*Allergy and Immunity in Tuberculosis. J. Albert-Weil.—p. 134.

Hematopoietic Action of Concentrated Gastric Juice: Rôle of Stomach in Pernicious Anemia. C. Dreyfus.—p. 138.

Allergy and Immunity in Tuberculosis.—Albert-Weil states that tuberculous allergy is essentially different from true immunity. In man there is no real antituberculous immunity, but there may be a resistance to tuberculous infection, that is, a relative restriction of the propagation of tubercle bacilli in the organism resulting from the reticulo-endothelial and serologic reactions to the infection. This resistance cannot be produced unless the person in question harbors some living bacilli which sensitize him and render him capable of exhibiting allergic reactions. The presence of living tubercle bacilli in the organism causes the formation of antibodies capable of reacting with antigens. This explains the great advantage of vaccination with BCG and also its drawbacks, fortunately palliated by the fact that the bacilli are avirulent and their protein fractions less harmful. The presence of some living bacilli in the bodies of resistant persons and consequent formation of histopathologic lesions, no matter how small, explains why the cutaneous reactions to tuberculin are always positive in these persons. However, the violent allergic phenomena, the recrudescences, and so on, are not produced in the resistant, clinically healthy persons. In these the bacilli of reinfection, if they are not too numerous, do not propagate, or do so only slightly, because of an unfavorable serologic condition, and are immediately immobilized by the reticulo-endothelial elements as long as the individual preserves his equilibrium of resistance. It is the violent allergic reactions with fever, produced by the propagation of the tubercle bacilli and the intense bacillocellular destruction and disintegration, that most frequently cause the death of persons with progressive tuberculosis.

Presse Médicale, Paris

41: 233-248 (Feb. 11) 1933

Results of Surgical Treatment of Raynaud's Disease. R. Leriche and R. Fontaine.—p. 233.

*Contagiousness of Postoperative Phlebitis. J. Ducuing.—p. 236.

Tuberculosis and Mental Disturbances. R. Targowla.—p. 238.

Contagiousness of Postoperative Phlebitis.—Ducuing observed several facts which favor the contagiousness of postoperative phlebitis. They are: the epidemic character of the appearance of phlebitis, the coincidence of phlebitis with other infections, the appearance of phlebitis after operations rarely followed by venous complications during an epidemic of phlebitis, and the common characters of certain phlebitides during the course of an epidemic. The author thinks that while certain forms of phlebitis are due to infection, this factor is less evident in thromboses in which the clot is not adherent to the venous wall and which are grave chiefly because of the massive emboli which they cause. The author thinks the infection is exogenous and is transmitted from one patient to another by the surgeon or nurse. He has started to isolate his patients and when a small epidemic of phlebitis is noted the total number of operations is reduced for a few days, not only those frequently followed by phlebitis but also those in which it is rare.

Policlinico, Rome

40: 69-148 (Feb. 1) 1933. Medical Section

Hepatosplenomegaly with Jaundice. G. Melfi.—p. 69.

*Biochemical and Experimental Research in Rapid Cholecystography of Antonucci and Modification of Method. E. Liverani.—p. 128.

Curability of Ascites in Patients with Cirrhosis. M. Tripodi.—p. 141.

Rapid Cholecystography of Antonucci and Modification of Method.—Liverani reviews the literature and describes the Antonucci test for rapid cholecystography. The test can be made in either of the following ways: 1. After a three or four day diet poor in carbohydrates, the patient is given an intravenous injection of 125 cc. of a 40 per cent solution of dextrose containing from 2 to 3 Gm. of dissolved tetraiodophenolphthalein. Roentgen examination is made from a half to one hour after the injection and a maximum opacity is found after two hours. 2. After fasting the night and morning preceding the examination, the patient is given an intravenous injection of 125 cc. of a 40 per cent dextrose solution with

25 units of insulin and from 2 to 3 Gm. of tetraiodophenolphthalein. The author found that this method always results in distention of the gallbladder. He states that the rapid elimination of tetraiodophenolphthalein results from a hyperactivity of the hepatic cells and that this technic lessens the possibility of toxic effects from the iodine compound. He maintains, however, that intravenous injection of both tetraiodophenolphthalein and dextrose may bring on complications of phlebitis and collapse. Thus, in order to render the method less harmful, he advocates a separate oral administration of from 80 to 100 Gm. of dextrose dissolved in a little water, forty-five minutes before the injection of tetraiodophenolphthalein. The patient is given three egg yolks at 5 a. m. to cause a thorough voiding of the gallbladder. At 8 o'clock he is given the dextrose and, at 8:45, 3 Gm. of tetraiodophenolphthalein dissolved in from 30 to 40 cc. of twice distilled and sterilized water. The author found in his experiments on men and rabbits that the hyperglycemic curve determined by the combined dextrose-tetraiodophenolphthalein method is longer than that derived from the separate ingestion of dextrose. The glycemic curve shows no initial temporary drop, as found by Antonucci and others, when the modified technic is administered. The author states that according to both methods roentgenologic opacity of the gallbladder and its maximum filling begin when the glycemic curve is in the ascending phase or at its acme.

Archiv für Gynäkologie, Berlin

152: 173-446 (Jan. 24) 1933. Partial Index

*Roentgenology in Obstetrics. F. A. Wahl.—p. 173.

*Clinical Observations and Study of Results of Abortions Performed for Social Indications. M. Karlin.—p. 202.

Weight and Fluid Intake of the New-Born in First Ten Days.

C. Kaufmann and L. Bickel.—p. 210.

Cause and Treatment of Umbilical Hernia. B. Bergglas.—p. 214.

Radical Operation for Cancer of Vulva. A. Mandelstamm.—p. 260.

Development of Endometriosis. K. Heim.—p. 269.

*Significance of Aschheim-Zondek Test After Expulsion of Hydatid Mole.

W. Rosenstein.—p. 320.

Roentgenology in Obstetrics.—According to Wahl, a roentgenologic examination is indicated in cases in which ordinary clinical examination fails to give the desired information. The diagnostically obscure cases are readily interpreted by means of a roentgenogram. The location and position of the fetus, the question of whether there is more than one child, the position of the head and the relation of the size of the fetus to the size of the pelvis are clearly disclosed. No other method can demonstrate with greater precision the deformity or death of the fetus. The importance of the method in forensic cases is obvious. Roentgen examination should never be omitted in order to make sure that the fetus is viable before a cesarean section is performed. While a single plate will not furnish sufficient information, the author warns against serial plates for fear of damage to the fetus.

Abortions Performed for Social Indications.—Karlin reports on two series of abortions performed for social indications in Leningrad. The first series, performed during the first six months of 1931, includes 4,614 cases. The second series includes 7,167 cases performed in several clinics during February, 1931. In the first series considerable hemorrhage during the operation was noted in 4.33 per cent of the patients, and curettage was repeated in 0.97 per cent. There were three instances of rupture of the cervix and three instances of uterine perforation. There was no mortality. Complications of the genital organs were reported in only 4 of 365 cases followed up. In the second series, curettage had to be repeated in fifty-six patients, rise of temperature was recorded in fifty-eight, and inflammatory conditions of the genitalia were recorded in twenty-eight. There were eight cases of perforation of the uterus, with recovery, and there were two fatalities from fulminating infection. Economic want was given as the reason in 41 per cent. Among other reasons were listed a desire for economic independence, the desire to participate in the political and social life, educational demands, and greater refinement, with consequent aversion to domesticity. The author emphasizes the opinion expressed in earlier work that even extensive surgical experience cannot insure a safe outcome, as evidenced by the two fatalities in the second group.

Aschheim-Zondek Test After Expulsion of Hydatid Mole.—Rosenstein calls attention to the fact that Aschheim has definitely demonstrated that patients with a hydatid mole

or with a chorio-epithelioma secrete abnormally high amounts of hormone of the anterior lobe of the pituitary gland. That the hormone content of the urine is much higher in these degenerative forms of pregnancy than in normal pregnancy has been demonstrated by quantitative tests. For practical purposes the qualitative test is sufficient. It consists of luteinization and hemorrhagic spots on the ovaries of injected mice. On the basis of his own case and the experience of various observers, the author concludes that a positive test after expulsion of a hydatid mole and in the absence of a new pregnancy establishes the diagnosis of a chorio-epithelioma. He has not been able to find an exception to this rule in the literature. He believes that the negative phase in his case, indicated by a single negative test after expulsion of the mole, is to be charged up to the possibility of an occasional error inherent in every biologic test. A negative test after expulsion of a mole definitely rules out chorio-epithelioma. The author suggests, in view of the greater reliability of the test as compared with that of a histologic examination of uterine scrapings, that the order of procedure be reversed and urine examination for the pituitary hormone be given precedence over diagnostic curettage. The latter may be a factor in early dissemination of metastases and will give no information in the case of an ectopic chorio-epithelioma. The test should be made in the case of a hydatid mole every two weeks until it is negative. Thereafter the test may be repeated every four weeks for the next three months, at the end of which period the patient may be pronounced normal if the test has remained negative. A positive test four weeks after an operation for chorio-epithelioma indicates the recurrence of a malignant condition with greatest probability.

Deutsche medizinische Wochenschrift, Leipzig

59: 199-240 (Feb. 10) 1933

- Blood Group and Blood Transfusion. F. Schiff.—p. 199.
Practical Significance of Research on Blood Groups. Müller-Hess.—p. 201.
Blood Donor Organizations. E. Unger.—p. 204.
Problem of So-Called Traumatic Encephalopathies. F. Kehrler.—p. 206.
*Results of Desensitizing Hay Fever Treatment by Means of Mixed Pollen Extracts. K. Hansen.—p. 208.
Anatomic Investigations on Hernia of Hiatus Oesophageus. S. Koeppen and P. Frank.—p. 211.
*Menstrual Changes in Intestinal Motility. G. Halter and R. Pape.—p. 212.
Spleen and Fat Metabolism. S. Leites, A. Koslowa and W. Jussin.—p. 214.

Desensitization by Mixed Pollen Extracts.—Desensitization by means of a polyvalent pollen extract is, according to Hansen, the method of choice in the treatment of hay fever, and particularly in bronchial asthma caused by pollen antigens. The author made his observations during 1932 on 316 patients, who were subjected to desensitization with polyvalent pollen extract; 28 per cent were entirely free from symptoms, 42 per cent showed great improvement, 20 per cent were slightly improved, and 10 per cent were not improved. The author emphasizes that the treatment is a prophylactic one and therefore should begin before the period of propagation of the pathogenic pollen antigens; that is, it should be largely completed at the beginning of the blooming period of the grasses. In order to accomplish this, the treatment should be commenced between February and April. In patients who remain uninfluenced by the treatment with polyvalent pollen extracts, the influence of unusual pollen antigens should be studied, and a desensitization against these should be instituted during the following year.

Menstrual Changes in Intestinal Motility.—Halter and Pape investigated the influence of menstruation on the motility of the intestine by anamnestic inquiries on a large material and by roentgenologic studies on fifteen cases. Of the 481 women in whom the intestinal function was regular, only 1.2 per cent reported constipation at the time of menstruation, and 9.1 per cent stated that they noted a tendency to diarrhea. But, whereas the percentage of menstrual changes in intestinal motility was small among the women with normal intestinal function, 20 per cent of the women with habitual constipation reported that evacuation of the bowels became normal during the menstrual period. The roentgenologic tests not only confirmed the self observations of the women but revealed a menstrual increase in intestinal motility in more than half of the examined cases (eight of fifteen). The fact that the increase

in motility usually becomes manifest in a normalization of the intestinal function in patients with habitual constipation seems to indicate that the facilitation of the correlation of the various processes in the intestinal motility is the essential factor. For it is this correlation that is disturbed during the habitual constipation. This reflex connection is promoted by the menstrual increase in the sensitivity of the entire autonomic nervous system. If, during the intermenstrual period, the threshold of stimulation decreases again, the various pathologic forms of the intestinal activity return.

Deutsche Zeitschrift für Chirurgie, Berlin

238: 529-652 (Jan. 18) 1933

- Roentgenoscopy of Central Nervous System with Thorium as Contrast Medium. O. Wustmann.—p. 529.
*Results with Gastro-Enterostomy as Emergency Operation in Ulcer. L. Zukschwerdt and T. Eck.—p. 568.
*Development of Spindle Cell Sarcoma on Basis of Paget's Osteitis Deformans. C. Gerstel and R. Janker.—p. 577.
Is Malignant Pelvic Fracture a Compression Fracture? H. Walter.—p. 604.
Treatment and Evaluation of Fractures of Vertebrae. C. Schleipen.—p. 618.
Vertebral Changes After Traumatic Tetanus. L. Zukschwerdt and R. Axtmann.—p. 627.
Simultaneous Development of Osteochondritis in Six Joints. W. Müller.—p. 635.
New Treatment of Fibromas of Nasopharynx. J. Jäki.—p. 641.
Corrections After Operation for Harelip. E. Eitner.—p. 644.
Peculiarities in Topography of Innominate Artery in Relationship to Other Anomalies. A. Lurje.—p. 646.

Gastro-Enterostomy as Emergency Operation in Ulcer.—Zukschwerdt and Eck report the results of 192 gastro-enterostomies performed in Enderlen's clinic during the last twelve years, the indications for which were stenosis, perforation, bleeding, social indications and suspicion of malignant transformation. Bleeding constituted the most frequent indication in women. As compared with resection, the mortality of gastro-enterostomy was high. The best results were obtained in the patients operated on for bleeding or because of social conditions. A cure was obtained in 55.5 per cent. Only 21.6 per cent of those operated on for perforation were cured. This group showed the highest occurrence of peptic jejunal ulcer, 51.3 per cent. The best results were observed in patients between the fifth and seventh decade, and the poorest in the second decade. The results in women were better than in men. Gastro-enterostomies performed because a resection was technically impossible gave 28.5 per cent of cures.

Spindle Cell Sarcoma.—According to Gerstel and Janker, inaccuracies in description make it difficult to select from the literature the cases of sarcoma developing on the basis of Paget's osteitis deformans. They were able to collect thirty-nine undoubted cases and three doubtful cases. Their research established that the incidence of malignant transformation in osteitis deformans is not as rare as German literature would lead one to believe. The authors recommend, in addition to the surgical treatment, which is always more or less mutilating, roentgen irradiation of the lesion. They point out that their patient lived two and one-fourth years after treatment was begun, while the patients who were not treated or who were treated only surgically succumbed much earlier. The histologic studies of their case, besides verifying the clinical and roentgenologic diagnosis, demonstrated a peculiar relatively regular pattern of new bone formation not described heretofore in the literature.

Klinische Wochenschrift, Berlin

12: 169-208 (Feb. 4) 1933

- Pregnancy Kidney. L. Lichtwitz.—p. 169.
*Regulatory Action on Circulation of Substance Present in Organism: Significance for Hypertension. F. Lange.—p. 173.
Chemistry of Substances in Regulation of Circulation. K. Felix.—p. 176.
Roentgen Kymography of Thoracic Organs. H. Cramer, A. Wilke and H. H. Weber.—p. 179.
*Value of Greppi-Villa Test (Contraction of Spleen Following Epinephrine Injection) for Diagnosis of Thrombophlebitis Spleen Tumors. F. Klages.—p. 182.
Pathology of Coagulation of Blood. H. Storz and H. Schlunghaum.—p. 184.
Rheumatic Diseases of Heart and Vessels, Papulonecrotic Tuberculids and Tuberculin Anergy. Marion B. Sulzberger and E. Feit.—p. 189.

Circulatory Substance in Hypertension.—Lange calls attention to a substance that is present in the body and that has a vasodilating and blood pressure reducing action. The

substance can be differentiated from other factors influencing the circulation by its pharmacologic and physiologic effect and is present in all human and animal organs. The reduction in blood pressure is accompanied by a greater minute volume and an increase in the circulating quantity of blood. The dilating effect becomes manifest primarily on the arterioles. The point of attack is the contractile cell, not the nerve. Under physiologic conditions the substance is regularly present in the blood and is eliminated unchanged in the urine. Its quantity present in the blood or in the urine is independent of the time of day and of alimentation. In patients with hypertension there exist considerable quantitative changes. In essential hypertension the blood pressure reducing substance is eliminated in much larger quantities, and in the blood the substance is present in smaller amounts than is the case in normal persons. The condition is reversed in hypertension of patients with renal disease, for in these the substance is increased in the blood but decreased in the urine. In the hypertension of aged persons the substance is present in normal amounts in the blood as well as in the urine. From these observations the author concludes that the various forms of hypertension differ in their pathogenesis.

Greppi-Villa Test in Diagnosis of Thrombophlebitic Spleen Tumors.—Klages calls attention to the test that Greppi and Villa recommended for the diagnosis of thrombophlebitic tumor of the spleen. These authors showed that in patients with circulatory disturbances of the splenic vessels (thrombosis, endophlebitis, periphlebitis, stenosis of the splenic veins) the subcutaneous injection of 1 mg. of epinephrine results in considerable contraction of the spleen, whereas in hyperplastic and in indurating spleens the contracting action of epinephrine is not sufficiently pronounced to become clinically manifest. The author has studied the practical value of this test in observations on patients and in experiments on dogs. In three patients he observed, in addition to a considerable contraction of the spleen, an increase in the formed elements of the blood, particularly in the leukocytes, which during this disorder usually have a low initial value. He reached the conclusion that this epinephrine test is not absolutely specific for thrombosis of the splenic veins, because the fluctuations in the size of the spleen are already considerable under physiologic conditions and during pharmacologic modifications. However, in combination with the clinical manifestations he considers it nevertheless a valuable diagnostic aid.

Medizinische Klinik, Berlin

29: 177-208 (Feb. 3) 1933

- Results of Treatment of Laryngeal Carcinoma by Operation and by Prolonged Irradiation. V. Hinsberg and S. Epstein.—p. 177.
Atmospheric and Climatic Influences on Child's Organism: Curative Value. L. Moll.—p. 181.
Alimentary Galactosuria. Z. Brüll and P. Hegedüs.—p. 182.
Chlorine Gas Accident in Tilsit. W. David.—p. 184.
Roentgen Therapy in Acute Tonsillitis. E. N. von Oettingen.—p. 185.
Therapy and Pathogenesis of Sciatica. A. Löw.—p. 186.
Severe Anemias During Pregnancy. R. Schumann.—p. 187.
Barbituric Acid Allergy. K. Jontofsohn.—p. 189.
Etiology of Multiple Sclerosis. H. Ahringsmann.—p. 191.

Severe Anemias During Pregnancy.—Schumann discusses five cases of severe anemia that developed during pregnancy or during the puerperium. In four of them a connection with pregnancy could be proved at least as far as the time was concerned. But this, of course, does not prove that pregnancy is a causal factor. In four instances anamnesis revealed no former blood diseases, but two of these patients had some symptoms indicative of pernicious anemia, such as a megalocytotic blood forming type, achylia, glossitis, yellowish blood serum, and an increase of the biliary pigments in the urine. All these symptoms, with the exception of achylia and of a slight increase in the biliary pigments of the urine, disappeared in the course of the treatment. In one of these two women, who several years previously had exhibited a symptomatology of pernicious anemia, examination now during pregnancy revealed achylia and an increase of biliary pigments in the urine but no other signs of pernicious anemia. Another woman had, besides achylia, only the symptoms of severe secondary anemia, and the author thinks that this may be a case of achylic chlorosis. A fourth woman showed only the aspects of a secondary anemia. But these four cases had in common the fact that treatment with preparations of liver and

gastric mucous membrane, combined with arsenical medication, was so effective that a complete cure was obtained. The fifth case differs from other four in that it was refractory to all treatment. The fact that fatigue and paleness had existed three years previous to this pregnancy is considered by the author an indication that anemia had been present at the time, although an anemic blood picture of that period was not available. Treatment improved the condition at that time but the second pregnancy caused an acute exacerbation, and the author concludes that pregnancy was not the causal factor of this anemia but that pregnancy and confinement had an unfavorable influence on an already existing anemia. This patient died. The author thinks that interruption of pregnancy for the purpose of removal of the assumed cause of the anemia is not advisable. He considers interruption too serious an intervention to be undertaken on the weak patients, the more so since the prognosis is doubtful. On the basis of the results obtained in four out of five women, he advises that the anemia be treated as such, he thinks this will make normal confinement possible.

Barbituric Acid Allergy.—Jontofsohn points out that cases of febrile, morbilliform or scarlatiniform exanthems following medication with barbituric acid preparations have been reported as far back as 1917. Since then the author has watched for such cases, and in the course of fifteen years he has observed several dozen in spite of the fact that barbituric acid preparations were given with particular precaution in the Berlin clinic with which he is connected. Scarlatiniform or morbilliform exanthems were noticed in all cases and these were frequently accompanied by enanthems, such as redness of the gums, of the tongue, particularly of the foliate papillae, and of the larynx. This condition deserves consideration not only because it is difficult to differentiate it from scarlet fever and from measles but also because in weakened patients it may become an extremely grave complication and eventually hasten their death. The author illustrates this with three case reports. For the differential diagnosis of barbituric acid allergy it is important that the efflorescences are usually a mixture of scarlatiniform and morbilliform type and that they itch occasionally. Moreover, the paleness of the chin triangle, characteristic in scarlet fever, is usually absent. The scarlet fever blanching phenomenon may also prove helpful in the differentiation.

Münchener medizinische Wochenschrift, Munich

80: 165-204 (Feb. 3) 1933

- Mechanism of Stomach. O. Goetze.—p. 165.
Physiology and Pharmacology of Choline. K. Schübel.—p. 16.
*Interruption of Pregnancy by Roentgen Rays. H. Wintz.—p. 172.
Determination of Value of Valerian and Hops Combination. V. Luther.—p. 174.
*Positive Roentgen Signs of Lungs in Gastro-Intestinal Disorders with Especial Consideration of Gastroduodenal Ulcers. E. Koppenstein.—p. 175.
Postoperative Stimulation of Peristalsis and Treatment of Atony. P. Caffier.—p. 176.
How Can the General Practitioner Make the Home of His Patient Allergen Free? M. J. Gutmann.—p. 178.
Ascending Forms of Nephritis. R. Schoen.—p. 180.
Roentgenologic Diagnosis of Tumorous Bone Diseases. R. Kienböck.—p. 182.

Interruption of Pregnancy by Roentgen Rays.—Wintz discusses the various aspects of abortion produced by roentgen rays on the basis of his own observations and of those reported in the literature. He points out that the required dose is comparatively high. Because the ovaries also are influenced by the roentgen rays and because the amount of rays that attacks the ovaries is equal to the castration dose, it is inadvisable to employ roentgen abortion in young women. In older women roentgen abortion can be resorted to, but even in these cases it is not always the method of choice. Another shortcoming of roentgen abortion is that it involves the danger of defective offspring. In spite of these disadvantages, the author recommends roentgen castration for certain cases. However, in order to be successful, the treatment requires the cooperation of the family physician, the gynecologist and the radiologist. It should not be left to the patient to decide whether she wants roentgen abortion or curettage, but all factors should be carefully weighed and the best method determined and carried out.

Roentgenologic Aspects of Lungs in Gastro-Intestinal Disorders.—Roentgenoscopy of 2,000 patients with disorders of the gastro-intestinal tract revealed to Koppenstein that 17.5 per cent had calcified processes in the lungs. In an additional 7 per cent of the cases, roentgenoscopy revealed uncalcified processes of the pulmonary parenchyma, which had remained unnoticed until this examination. In some patients the processes were quite extensive, even caverns being present in some instances. The author also observed that patients with gastroduodenal ulcer show parenchymatous changes of the lung just as frequently as do patients with other intestinal disorders.

Wiener klinische Wochenschrift, Vienna

46: 161-192 (Feb. 10) 1933

- Treatment of Diffuse, Suppurative Leptomeningitis. O. Mayer.—p. 161.
*Bronchospast: Dyspnea in Patients with Heart Disease. N. Jagić.—p. 164.
Neuro-Energy Exchange in Patients with Asthma. N. Kabanow.—p. 165.
Complement Fixation Reaction in Clinic of Gonorrhea in Men. R. Chwalla.—p. 169.
Does Solution of Secondary Butylbrompropenylbarbituric Acid (Pernocron) Represent an Enrichment of Anesthetic Methods? A. Maurer.—p. 172.
*New Method for Functional Test of Circulatory System. M. Szour.—p. 174.
Urinary Disorders of Women. W. Latzko.—p. 176.
Psychology and Psychopathology in Criminal Procedure. H. Herschmann.—p. 177.
Prevention of Meat Poisoning. O. H. Henneberg.—p. 178.

Bronchospastic Dyspnea in Heart Disease.—Jagić shows that inflation of the lung may develop in various types of heart disease even if emphysema is absent. This increase in the volume of the lung is primarily caused by increased respiration during dyspnea. It is probable that bronchospastic factors are involved, which during the increased inspiration and insufficient expiration of dyspneic patients exacerbate the inflated condition and the deep position of the diaphragm. Moreover, the so-called pulmonary rigidity that occurs in heart disease and is thought to be the result of stasis (changes in pulmonary circulation) is partly caused by the changed ventilative condition, which in turn is the result of bronchospasm. The author observed that in various types of heart disease attacks of dyspnea develop, which correspond not to typical cardiac asthma but more to bronchial asthma. The cardiac disorders were primarily decompensated valvular lesions and decompensated cardiac disturbances in hypertension or in emphysema. These patients did not have nervous bronchial asthma previous to the decompensation, and secondary bronchospasm must be thought of. The author recommends epinephrine or a combination of epinephrine and pituitary gland for the diagnosis and treatment of these cases. The dyspnea, and particularly the difficulty and prolongation of the expiration, disappear shortly after the injection of these preparations.

New Functional Test of Circulatory System.—Because the commonly employed test methods for the functional capacity of the circulatory system have some shortcomings, Szour devised a new one, the technic of which is as follows: First the maximal and minimal blood pressure values are determined while the patient is in the horizontal position. Then the right or left arm is lifted vertically and the maximal and minimal pressures are again determined in the lifted arm. Then the patient is asked to bend the body ten times in succession, and the maximal and minimal pressures are again determined. The author reasons that in the vertically lifted extremity the peripheral arterial circulation is made much more difficult, which, depending on the functional capacity of the circulatory system, becomes manifest in changes in the maximal and minimal blood pressures, and especially in the amplitude. This test method was employed in a number of patients with and without circulatory disturbances. The second part of the test (after lifting of arm) reveals in patients with normal circulation that the maximal and minimal pressures decrease by 20 or 25 mm. of mercury, but the amplitude remains as a rule unchanged or increases slightly in comparison with the first part of the test. In patients with impaired circulation the decrease in the maximal and minimal pressures is less marked and the minimal pressure may even increase, but more important is the fact that the amplitude frequently decreases. In the third part of the test (after bending exercises) healthy persons show an increase in the maximal pressure and in the

amplitude as compared to the values found in the second part of the test; in circulatory insufficiency, however, the maximal pressure remains unchanged or decreases, and the amplitude decreases in most instances.

Zeitschrift f. Geburtshilfe u. Gynäkologie, Stuttgart

104: 209-365 (Jan. 31) 1933

- Metastases in Uterine Cancer. W. Reich.—p. 209.
Relation of Matrix to Carcinoma of Visible Portions of Female Genitalia. H. Hinselmann.—p. 228.
Surgical Diathermy in Treatment of Genital Carcinoma. G. Huwer.—p. 244.
*Question of Regulating Blood Calcium Level as Well as Its Composition Through Parathyroid Hormone. R. Spiegler and K. Stern.—p. 250.
Intralogular Methemoglobinemia of Pregnancy Without Hemolysis. H. Dennyhardt.—p. 275.
*Anterior Lobe Pituitary Hormone and Amenorrhea. P. Wirz.—p. 293.
Partial Absence of Skull (Meroacrania) with Podencephaly. O. Gragert.—p. 322.
Possibility of Prevention of Toxemia of Pregnancy and of Consequent Reduction of Stillbirths to 1 Per Cent. H. van der Hoeven.—p. 337.

Regulating Blood Calcium Through Parathyroid Hormone.—On the basis of animal experiments and their experience with a case of postoperative tetany complicated by herpetiform impetigo, Spiegler and Stern make the following deductions: 1. Parathyroid hormone is capable of raising the blood calcium level in man, though not to as high a level as in the lower animals. 2. The curve of the blood calcium rise reaches its highest point in from one to two hours after injection. 3. The effect apparently does not depend on the amount of hormone used. 4. The parathyroid hormone effect cannot be considered specific, because the same effect can be accomplished by other means, such as injection of prolan or epinephrine. 5. The changes in galvanic irritability did not parallel the blood calcium level. 6. An effect of regulating calcium metabolism in the sense of bringing it to normal combinations was noted in the pathologic case observed. 7. It was possible through the administration of parathyroid hormone to regulate the rhythm of calcium metabolism and to bring about a cure in a case of tetany following thyroidectomy. 8. The galvanic irritability does not depend on the particular combination in which calcium is present in the blood.

Anterior Lobe Pituitary Hormone and Amenorrhea.—Wirz, in his study of the relation of the anterior pituitary hormone to functional amenorrhea, quotes Zondek's statement that the pituitary gland secretes sex controlling hormones at all ages, and he investigates the status of these hormones in the course of amenorrhea. According to Zondek, prognosis in functional amenorrhea is poor if a five time concentration of urine reveals the presence of the follicle maturing hormone. Utilizing this functional method, the author examined the urine of women with a suspended ovarian cycle, of women with an irregular cycle, and of women who had ceased menstruating for some time. The author's experiments aimed at the solution of the following questions: 1. The fate of the anterior pituitary hormone before sexual maturity and the question of its being excreted in the urine. 2. The fate of the hormone during amenorrhea of lactation. 3. The fate of the sex controlling pituitary hormones in amenorrheas of ovarian origin at sexual maturity. The author found that the pituitary glands of fetuses, of the new-born and of children under 5 years contained the follicle ripening hormone A but not the luteinizing hormone B. The entire gland before the first year hardly contained a single mouse unit. Hormone A was excreted in small amounts in the urine of children. The author supposes that hormone B is not secreted until shortly before puberty. The increased secretion of hormone A together with the appearance of hormone B at the time of sexual maturation are responsible for the establishment of the ovarian cycle. He failed to find the sex hormones in the pituitary glands of parturient women shortly after delivery. After a full term pregnancy, hormone A appears in the urine from two to three weeks post partum, while hormone B appears from five to six weeks post partum, the latter fact coinciding with the onset of the first ovulation. This explains the frequent onset of menstruation six weeks post partum. The failure to menstruate in a lactating woman is accompanied by an increased excretion of the hormone in the urine. This type of amenorrhea is of ovarian origin, since the pituitary hormone is secreted at this period as well. With regard to

amenorrheas of ovarian origin in nongravid women, it was found that the prognosis was poor if the hormone was present in the amount of 110 mouse units for each liter of urine. In such cases, folliculin (ovarian hormone) could not be demonstrated. The question of whether the increase of hormone A in these cases is due to increased production in the pituitary or to the failure on the part of the ovary to utilize it has not been answered. The author agrees with Zondek that the presence of 110 mouse units in a liter of urine in cases of amenorrhea signifies a total suspension of ovarian function. It is obvious that administration of anterior lobe pituitary extracts in such cases is futile.

Zeitschrift für Krebsforschung, Berlin

38: 351-464 (Feb. 10) 1933. Partial Index

- Influence of Diet on Growth of Transplanted Tumors. W. Caspari and F. Ottensooser.—p. 351.
 *Cancer and Diet. A. H. Roffo.—p. 369.
 Malignant Course of Giant Cell Tumor of Bone. W. I. Korchow.—p. 380.
 Organotropy of Neoplasms. E. Fränkel.—p. 394.
 *Vitamins and Cancer. L. von Gordon.—p. 398.
 Carcinoma of Digestive Apparatus in Young Persons. G. Wolff.—p. 409.
 *Occurrence of Atoxyl-Fast Lipase in Serum of Cancer Patients: Its Clinical Significance. F. Bernhard.—p. 450.
 Diastase Inactivator in Malignant Tumors. F. P. Tinozzi.—p. 462.

Cancer and Diet.—Roffo describes his own tests and cites observations of others revealing the influence of diet on malignant tumors. Animal experiments, as well as the high incidence of cancer among peoples whose diet has a high cholesterol content, prove that the cholesterol content plays the main part. This influence of the diet, which is related to the increased absorptive capacity of the cancer cells, involves a greater absorption of the energetic elements than is required for normal cell growth, and the disorganized and neoplastic growth, characteristic of cancer, may be the result. The author thinks that these observations lead to a better understanding of the complicated problem of the pathogenesis of malignant tumors, and that they are important for the study of the prophylaxis and of the precancerous stage.

Vitamins and Cancer.—In discussing the etiology of cancer, von Gordon emphasizes that two factors have to be considered, the immediate cause and the primary cause. The vitamins may be an immediate cause or they may participate in the transformation of the cells. The author discusses and evaluates the observations of numerous investigators who have studied the relations between vitamins and cancer. He does not believe that the so-called growth vitamins are of greater importance in the pathogenesis of cancer than are other vitamins, for he thinks that all vitamins have an influence on growth, in addition to their specific action. He calls attention to Geréb's observations, which proved that a diet deficient in all vitamins retards tumor growth much more than one in which only certain vitamins are omitted. In view of the fact that cancer develops slowly and that it is frequently latent for several years, he considers it inadvisable to encourage the intake of large amounts of vitamins, particularly in older persons, who are more likely to develop cancer and have a capacity for storing vitamins.

Atoxyl-Fast Lipase in Serum of Cancer Patients.—Bernhard points out that the blood serum of patients with cancer frequently shows an increase in the atoxyl-resistant lipase and that this manifestation has a certain diagnostic value. The increase is caused by the carcinoma tissue, which contains considerable amounts of atoxyl-fast lipase and eliminates it into the blood. Following radical removal of a carcinoma, the lipase content of the serum becomes normal again. The value of lipase demonstration for the diagnosis of cancer is limited by two factors: (1) the increase in the lipase content is, after long existence of the tumors, followed by a decrease, in the course of which normal values are passed again; (2) increase in atoxyl-resistant lipase sets in as soon as numerous epithelial cells take on a young or embryonic character. Increase in the lipase content of the blood serum frequently becomes manifest in hypertrophy of the prostate and in chronic cystic mastitis, and it is noteworthy that in these conditions there is a high percentage of carcinomatous degeneration. It is highly probable that a carcinoma exists if an increase in the atoxyl-resistant lipase persists for a long period

during chronic cystic mastitis. In the course of roentgen treatment of carcinoma, large amounts of lipase are often eliminated, but if the carcinoma tissue is completely destroyed the lipase content decreases to normal values. Consequently the determination of lipase is helpful in the estimation of the result of roentgen irradiation. The increased content of the serum in atoxyl-resistant lipase disappears following radical removal of a carcinoma. If this is not the case, or if an increase sets in again, there is danger of a relapse. In order to utilize these observations for the diagnosis of carcinoma, tests are now being made with the lipase that has been isolated from carcinomas. Its cleavage products in the blood may prove of greater value for cancer diagnosis than the demonstration of lipase alone.

Zentralblatt für Gynäkologie, Leipzig

57: 305-384 (Feb. 11) 1933

- Rôle of Vegetative Nervous System in Pyelitis and Ileus of Pregnancy. M. Penkert.—p. 306.
 *Pyelitis and Ileus of Pregnancy. H. Preiss.—p. 319.
 Ureter in Pregnancy and in Puerperium. F. Friedl.—p. 327.
 Hydronephrosis of Ureter Due to Compression by Parametrial Endometriosis. G. Haselhorst.—p. 337.
 Irradiation of Kidney in Postoperative Ureteral Fistula. W. Weibel.—p. 343.
 Endometriosis of Urinary Bladder: Case. H. von Sauer.—p. 347.
 Lipoma of Prepuce in Small Girl. B. Ottow.—p. 351.
 Experiences with Cystochrom (a Dye) in Determination of Functional Diagnosis of Kidneys. K. Dierks.—p. 352.

Pyelitis and Ileus of Pregnancy.—Preiss states that the literature of the past forty years contains 250 cases of mechanical obstruction of the intestine in pregnancy, and 34 cases of paralytic ileus. He emphasizes that in this last group only those cases were included in which a normal gravid uterus was apparently responsible for the ileus. All of the thirty-four cases included in this group were verified post mortem. They were characterized by the absence of a mechanical cause for obstruction. The uterus was neither displaced nor inflamed. The small intestine was found much distended above and collapsed below the innominate line (in the true pelvis). Nine of the cases were complicated by pyelitis. To these nine the author adds his own case, in which pyelitis and ileus coexisted. Laparotomy revealed the presence of a paralytic ileus. Conservative cesarean section was performed and the patient recovered. The following theories were advanced to explain the pregnancy ileus: (1) paralysis of the intestine as the result of toxemia caused by pyelitis; (2) reflex ileus as the result of ureteral dilatation; (3) retroperitoneal phlegmon caused by pyelitis and in its turn producing a reflex ileus; (4) toxemia of pregnancy resulting in atony of the ureters and of the intestine, the latter not being able to withstand the pressure of a gravid uterus. The treatment consists in laparotomy and interruption of pregnancy. The presence of pyelitis without ileus does not call for interruption of pregnancy.

Ugeskrift for Læger, Copenhagen

95: 131-158 (Feb. 2) 1933

- *Infectious Mononucleosis with Especial Regard to Differential Diagnosis with Diphtheria. F. Wulff.—p. 131.
 *Meralgia Paraesthetica. K. H. Krabbe and M. Ellermann.—p. 135.

Infectious Mononucleosis.—Wulff says that infectious mononucleosis occasionally more or less resembles diphtheria and is confused with diphtheria in its graver forms. The blood picture is a reliable aid in differential diagnosis. The examination of smear specimens of the blood is therefore imperative before treatment with diphtheria antitoxin should be considered.

Meralgia Paraesthetica.—Krabbe and Ellermann find meralgia paraesthetica more frequent than other sensitive neuritis in the lower extremities and say that the practitioner should understand the good prognosis of this disorder. As the fifteen cases they report, like those in the literature, show a variable etiology, treatment should if possible be directed to the cause. Beyond this treatment no particular therapy is indicated, and massage and electrical treatment are useless or even contraindicated. The troublesome symptoms of meralgia paraesthetica have a tendency to disappear after some time. Only in more stubborn cases can there be reason for considering the intervention that has been suggested, division of the sheath in fascia lata in which the lateral cutaneous femoral nerve passes for a short distance.

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RESULTS OF THE WORK OF THE COMMISSION ON MEDICAL EDUCATION

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Educational reforms can be brought about in a number of different ways. One way is by decree. That way is quick and relatively easy, provided agencies exist to issue and enforce the decree.

Up to twenty-five years ago, reform by decree had not been tried very extensively in America. The machinery for it was lacking. The federal government exercised no authority over education, and, except in a single state, no comprehensive scheme of state control had been developed. Indeed, the state's obligation to protect the public against malpractice in those professions that deal with health and property had only just been begun to be taken seriously. In attempting to afford this protection, however, the state concerned itself solely with the individual practitioner and not with the school that trained him.

Then suddenly, just about twenty-five years ago, the possibility of effecting educational reform by decree, even in the absence of governmental agencies of control, was demonstrated. The Council on Medical Education and Hospitals, which had been created by the American Medical Association in 1904, showed how it could be done. The place of the Council in American educational history is secure—and prominent. I doubt whether responsibility for so much that is momentous in the recent development of higher education can be traced to any other body. At the risk of repeating some things that are familiar, I will note a few of the most important consequences of its activities.

No other phase of American education has ever been so drastically reformed in so short a time as was medical education. In 1904 the vast majority of medical schools were with respect to requirements for entrance and instructional procedure scarcely above the level of trade schools. By 1918, medical education had been generally transformed into a university enterprise—on the whole the most consistently excellent enterprise that the universities conducted. In detail, this transformation meant that within a period of less than fifteen years the following things had happened: The number of medical schools had been reduced 50 per cent. The number of medical students had likewise been reduced in approximately the same proportion. Precise standards applying to students, teaching staff, equipment and hospital facilities had

received general recognition and were being rigidly enforced. The content of premedical education had been defined. The medical curriculum had been prescribed.

To the Council belongs the principal credit for these happenings. It was the motivating force in bringing them to pass, even when it was not the active executive agent. (The Association of American Medical Colleges, for example, had concerned itself with matters relating to the curriculum and teaching methods.) But in accomplishing the reform of medical education the Council also unintentionally became the initiator of a great movement in which the whole American university system is still caught up.

For years, educational leaders had been seeking some method of dealing authoritatively and expeditiously with educational issues that are not local, that are not even state issues, but are national. How could flagrant abuses be remedied, dishonesty and greed be suppressed, woful inadequacies be repaired? The Council on Medical Education and Hospitals seemed to have hit on a method for achieving these ends. It could be applied at once to alter the practice of any group of institutions. And it was of the utmost simplicity. Of what did the method consist? A statement of standards, classification, publicity, the finger of scorn—it was an irresistible sequence, provided the classifying body was large enough or representative enough or possessed of enough real or artificial prestige. No institution could long stand out against it. Pride and fear, as well as respect for the classifying agency, all combined to induce conformity.

I do not go so far as to say that if it had not been for the Council on Medical Education and Hospitals there would have been no standardizing movement in American higher education. Something of the sort was bound to come because it was needed. Even before the Council issued its first publications, tentative experiments looking in the same direction, although on a smaller scale, were in progress. But the dramatic and brilliant success of the Council's undertaking relieved all other educational hodies of the necessity of taxing their ingenuity further. The prescription for reform by decree had been found. The formula for a control as absolute as that exercised by any of the governmental bureaucracies of other countries had been discovered. All that any agency interested in changing educational practices needed now to do was to imitate the Council as closely as possible. And for two decades American university education has been under the sway of the Council's imitators. Colleges of liberal arts have been defined and classified by a variety of bodies having a variety of different, and occasionally conflicting, conceptions of college education. Associations of practitioners or teachers—and sometimes both together—representing law, dentistry, pharmacy,

architecture and librarianship have prescribed standards for schools preparing for these professions and enforce the standards through classification and publicity. Bodies representing other professions are already in the early stages of the same procedure. In short, the Council on Medical Education and Hospitals reformed not medical education alone. Through the influence of its example it has brought about the general reform of professional education. And the progress that has been made in the elevation of professional education in other fields is only a little less remarkable than the great upswing in medical education.

It is well known that these developments have been accompanied by a spectacular increase in university costs; an increase in unit costs as well as in total costs. The Council on Medical Education and Hospitals and its associated bodies cannot escape a portion of the responsibility for the new scale of university expenditure. Twenty-five years ago, medical education nearly everywhere cost too little. I will not say that it now nearly everywhere costs too much; I will merely point out that the rate of increase has been fantastic. Twenty-five years ago, no one could have imagined the possibility of securing for any university division that served only a few students such stupendous sums as are now invested in medical teaching plants. Just as incredible would have seemed the staggering maintenance charges, which make the current per capita costs of medical education so high. The establishment of schools of medicine on this plane has been a challenge to every other professional interest. As fast as possible the outlays for equipment, teaching and research in several other lines of professional education have been forced up in order that these undertakings may not suffer by comparison with medical education.

These great reforms in medical education, which carried with them the profound changes in university polity that I have tried to sketch, soon reached a second stage. And this second stage is quite as instructive as the first. The second stage was crystallization. The standards set up by the Council dealt with things that could be measured and counted: with time, money, numbers of people, physical equipment. They did not change fundamentally with the years; the required quantities were simply increased. They were restrictive rather than stimulating. The prescriptions of the Association of American Medical Colleges which related to the curriculum likewise tended to inhibit any extensive changes. Moreover, as the standards of the Council and the association took shape they were rapidly translated into state regulations; here and there into state laws. By 1920 the medical schools of the country were in a strait jacket composed of specific and detailed requirements, many of them quite mechanical and some of them obsolete. The schools no longer approved the requirements and yet they could see no avenue of escape.

Thus the university system of America received at the hands of medical education another important lesson. It was now demonstrated that reform by decree, though quick and easy and spectacular, is of strictly limited applicability. A decree—particularly the type of decree developed by voluntary standardizing agencies—is a primitive instrument, a kind of policeman's club. It can bring about crude and primitive changes; and where these are required it is an indispensable weapon.

It should be held in reserve for such uses. But medical education was now long past this point. Obviously, it could not be helped by a new decree. The fact that no one suggested this remedy is illuminating.

What had the problem of medical education come to be? In a word, it was how to continue to grow. How to recast and keep on recasting the scientific and technical materials of instruction so as to incorporate in them the essential parts of the new discoveries that are constantly being made and the new points of view that are being developed. How to articulate itself with university aims and methods that are undergoing a complete alteration. How to adjust itself to a changed and constantly changing social setting. The conviction spread among all the parties at interest, associations, state boards and university officers, that there was but one promising way to attack the problem. That was to examine medical education anew with a view to establishing inductively the principles that should guide its future progress. Interpreting this general sentiment, the Association of American Medical Colleges took the action which led to the organization of the Commission on Medical Education in 1925. The commission immediately appointed Dr. Willard C. Rappleye as its director of study. In the years 1927 to 1930 inclusive it issued six interim reports. With the publication of its final report in 1932 the commission disbanded.

What are the results of this seven-year undertaking? I doubt whether any one yet knows. Great changes have taken place in medical education since 1925. How far the commission is responsible for these, probably nobody could say. The members of the commission would be the last to claim credit for developments in which associations and schools and state boards have all cooperated. But a few significant results of the commission's work seem to be beyond dispute. Some of these are, I hope, significant not for medical education alone but for higher education in general. I would classify these results under four rubrics:

1. The circumstances of the creation and support of the commission itself were unique in educational history, and they are suggestive for future enterprises of this sort. It was established as an absolutely independent body, responsible to no one and reporting to the world at large. Its membership was representative of every interested group, professional, governmental, scientific and educational. A large part of its support came from the voluntary contributions of the medical schools of the United States and Canada, to which were added the liberal subscriptions of the American Medical Association, the Rockefeller Foundation, the Carnegie Corporation and the Macy Foundation.

2. The commission investigated exhaustively a number of situations that had long been the field of controversy. By publishing the facts it settled these controversies, at least for the present. Let me recall several of these factual studies. Whether there is now, or is to be, an oversupply or an undersupply of physicians, and how far their distribution is faulty, need no longer be matters of debate. The facts are now known. It is known also that a shortened medical course to prepare a lower order of physicians to serve the rural areas is neither necessary nor practicable. The present extent of specialization is known. More circumstantial and extensive data than have ever been assembled before are now at hand bearing on that most important question for medical education; namely, Of what does the general practitioner's practice consist?

3. These statistical studies were reinforced by another group of investigations not quantitative but interpretative and critical, designed to furnish a base for constructive reforms. For example, there is Dr. Rappleye's invaluable monograph on Medical Education in Europe. Postgraduate education is informatively and suggestively discussed and placed in a new setting. Both the medical course and premedical education are subjected to extended but sympathetic critiques. Obsolete requirements, mistakes of emphasis and method are pointed out and new principles are proposed. Current practices are judged by their effectiveness in contributing to the central aim of the medical course. That aim, the commission declares repeatedly, is not to produce a finished physician but to equip the student to begin the practice of medicine.

4. The most important contribution of the commission was, I believe, the point of view which it consistently represented. This point of view was revealed in its earliest actions. At its first meeting, in October, 1925, "it suggested to the Federation of State Medical Boards and to the Association of American Medical Colleges that a truce of a limited number of years be established, during which any member of the Association might experiment with medical education without penalty to its graduates. The suggestion was adopted by both bodies."¹ The response of the medical schools to this grant of freedom was immediate and widespread. More extensive and fruitful experimentation has been carried on in the last seven years than in any previous period of similar length. Subsequent votes of the Federation of State Medical Boards in 1929 and 1930 confirmed this first tentative action and gave the schools a permanent charter of liberty with respect to curriculum and educational requirements.

Of a piece with its intercession with the boards and the association was the commission's early decision not to recommend a new curriculum. In the end it went further still. It decided not to recommend anything. It was unwilling to advocate any procedure or device that could later be transformed into a regulation. It preferred to confine itself to a record of facts and a formulation of such principles as clearly derived from the facts.

In short, the commission's point of view was evolutionary rather than bureaucratic. It took the position that to build and maintain a scheme of professional education is an endless task. There is no stopping point. Never can we say, "Now it is done, let us cast it into law." Always it must be recast to meet new and unforeseen social conditions, rearranged to accommodate the growth of knowledge. Especially is this true of medical education, for year by year science recreates medicine; year by year society's demands on the physician change. If the commission can have established its point of view and can have given currency to its method of dealing with educational problems as these continue to emerge, it will have begun a new era in medical education.

But I am hopeful that it will have done more. I am hopeful that other agencies of professional education will note both the circumstances that gave rise to the appointment of the commission and the conclusions at which it arrived, and will govern themselves accordingly. That would be appropriate. Medical education led the university world into the wilderness of standardization and regulation. It should reveal the way out.

TREATMENT OF BURNS WITH GENTIAN VIOLET.

PRELIMINARY REPORT

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AND

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NEW ORLEANS

Following the suggestion of Aldrich,¹ we have treated burns with a 1 per cent aqueous solution of gentian violet. Since the results in general were satisfactory, we have made an attempt, which we believe to be successful, to improve the technic of the use of the dye.

According to Aldrich, gentian violet aqueous solution is best applied by means of a swab or a spray in order to cover the denuded surface completely. This procedure is repeated every two hours for the first twenty-four, during which time a fine "eschar" is formed. Aldrich recommends the method for both clean and infected areas after sufficient débridement has been done.

Our series represents fifteen treated cases, each patient having a first, second or third degree burn covering from 5 to 35 per cent of the surface of the body. Ten cases were treated by the method of Aldrich. The remaining five were treated by our method, which is described in this report. The accompanying table presents brief clinical data regarding each case.

Complete cytologic and chemical studies of the blood were made in all cases. Low chloride and high corpuscular concentrations were found, corroborating the observations of other workers. In every case in which the burned area occupied 10 per cent or more of the surface of the body, the chloride content, expressed as sodium chloride, was well under 400 mg. per hundred cubic centimeters of blood, and the corpuscular concentration was over 56 per cent. The regulation of these factors constituted an additional routine in the treatment of our cases. Dextrose and nonprotein nitrogen determinations and white and red blood cell counts were made, which did not, however, give any information that was especially beneficial to us in the treatment.

We found no reports in the literature of blood sedimentation rates in cases of burns, but we found that this procedure gave us information of inestimable importance in carrying out the treatment and in establishing the prognosis. A report correlating clinical observations with sedimentation rates and blood concentration determinations will be made the subject of a future communication.

RESULTS OF TREATMENT

The rationale of the treatment of any burned area is influenced necessarily by many factors. We believe that infection plays the major rôle in the so-called toxemia of burns. If this is true, agents that are more antiseptic than the medicaments in general use at the present time must be employed. Apparently, streptococci are the micro-organisms that are chiefly concerned in bringing about the toxic state. We have repeatedly isolated pure strains of this germ from under

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1. Aldrich, R. H.: The rôle of Infection in Burns: The Theory and Treatment with Special Reference to Gentian Violet, *New England J. Med.* 208: 299-309 (Feb. 9) 1933.

the eschars of burned areas, especially in those cases in which toxic manifestations were present.

Gentian violet, or triphenylmethylamine, a coal tar derivative, is a strong antiseptic specific for the pyogenic, gram-positive organisms. In addition, especially when used as recommended in this report, it answers previously established criteria for the treatment of burns in that it produces immediate analgesia in the burned area, it forms a firm and adherent but pliable dressing which protects the affected surface, and it prevents further exudation with resultant dehydration or further extrinsic contamination from bacteria.

In our series of fifteen treated cases, we had one fatality. The patient was a poorly developed, mute child, aged 8 years. Thirty-five per cent of the surface of the body was burned in the second and third degrees, and at the time of the accident the child was suffering also from a definite infection of the bronchopulmonary tract. The temperature on admission was 104 F. Twenty-four hours after treatment with aqueous gentian violet, the temperature dropped to 99.8 F. and remained approximately at that point until the seventh

to over 99.8 F., nor was any evidence of toxemia present, and since the end-results of the treatment were satisfactory, we have thought it important to make this preliminary report, which will be followed by a detailed report of the treated cases.

CONCLUSIONS

1. Treatment of burns with gentian violet, as first suggested by Aldrich, gives excellent end-results.
2. From our experience, we believe that gentian violet jelly is superior to the aqueous solution of the dye.

RHEUMATOID ARTHRITIS

A NEW METHOD OF APPROACH TO THE DISEASE

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NEW YORK

Chronic arthritis is one of the great medical problems of civilization, certainly of civilization in the temperate zones. One might almost say that every age group has its arthritic problem. For example:

Ages 2 to 5 years, Still's disease.
Ages 5 to 20 years, rheumatic fever.
Ages 20 to 50 years, rheumatoid arthritis.
Ages 50 to 70 years, osteo-arthritis.

There is some overlapping, of course, between the groups, but the highest incidence of these four forms of arthritis is observed respectively within the years noted.

In the present paper I discuss certain recent developments in the field of arthritis and show how this newer knowledge can be applied in the diagnosis, prognosis and treatment of joint disease in general and of rheumatoid arthritis in particular.

OLDER CONCEPTIONS OF ARTHRITIS

Osler,¹ in the first edition of his textbook, drew an excellent picture of chronic arthritis as it was looked on forty years ago. The form of chronic arthritis now described as osteo-arthritis is referred to by Osler as "chronic rheumatism"; the form now known as rheumatoid arthritis is called "arthritis deformans." The distinction between the two types, however, is not sharply drawn, especially as regards pathology. At that time Osler followed the teachings of J. K. Mitchell² in looking on rheumatoid arthritis as a disease of neurotrophic origin and cited, in support of this view, such facts as its association with nervous shock, its similarity to the neurogenic arthropathies, its symmetrical distribution and its remarkable trophic changes. In the paragraph on etiology there is no reference to such factors as focal infection, intestinal intoxication or dietary deficiency. Allergy was still a closed door.

RECENT ADVANCES

Needless to say, much progress has been made in our knowledge of arthritis since 1892. The more important milestones that mark this progress are:

1. Recognition of the two great types of chronic joint disease now usually referred to as rheumatoid arthritis

Read before the Mid-South Post Graduate Medical Association at Memphis, Tenn., Feb. 14, 1933.

From New York Hospital and Department of Medicine, Cornell University Medical College, and the Second Medical (Cornell) Division of Bellevue Hospital.

1. Osler, William: *The Principles and Practice of Medicine*, New York, D. Appleton & Co., 1892, p. 278.

2. Mitchell, J. K.: quoted by Osler: *The Principles and Practice of Medicine*, 1892, p. 283.

Treatment and End-Results in Fifteen Cases of Burns

Case	Age	Degree of Burn	Part of Body*	Area Burned†	Infection On Admission	Previous Treatment	Treatment	End-Result
1	15	1 & 2	L	9%	Absent	None	Aqueous	Excellent
2	55	1 & 2	A	6%	Present	None	Aqueous	Excellent
3	24	1 & 2	A	6%	Present	None	Aqueous	Excellent
4	12	2 & 3	A	10%	Present	None	Aqueous	Excellent
5	60	2 & 3	L, T	14%	Absent	Amertan	Aqueous	Partial failure
6	8	2 & 3	A, L, T	33%	Absent	None	Aqueous	Death
7	44	1 & 2	A, F	5%	Absent	Tannic acid	Aqueous	Partial failure
8	5	1 & 2	A	3%	Absent	None	Aqueous	Excellent
9	22	1 & 2	L	5%	Present	None	Aqueous	Excellent
10	35	1 & 2	L	7%	Absent	None	Aqueous	Excellent
11	2	1 & 2	A	7%	Absent	None	Jelly	Excellent
12	7	1 & 2	A, T, L	9%	Absent	Tannic acid	Jelly	Good
13	1½	1 & 2	L	5%	Absent	None	Jelly	Excellent
14	52	1 & 2	L	5%	Absent	None	Jelly	Excellent
15	63	2 & 3	A, T	5%	Absent	None	Jelly	Excellent

* In this column, F indicates face; T, trunk; A, arm; L, leg.

† Estimation of area burned is based on Berkow, S. G.: *Am. J. Surg.* 11: 315 (Feb.) 1931.

day, when bronchopneumonia developed, and death occurred on the tenth day. The necropsy revealed no evidence of any pathologic condition in the suprarenal glands, the kidneys or the liver.

In all other cases, the end-results were satisfactory. No contraction scars remained; the course of the patient was relatively fever free, and an early ambulatory condition resulted. In some cases, infection appeared beneath the antiseptic dressing, manifested by softening, so that further applications of gentian violet were required. After several such experiences, in some of which many applications of the dye were necessary, we decided to incorporate the dye into a jelly-like base. We therefore added 30 Gm. of tragacanth to 1,000 cc. of a 1 per cent aqueous solution of gentian violet. We placed a thick layer of this jelly on four or five sheets of gauze and applied the dressing to the burned area. Repeated applications were not necessary except in severe cases. A thin, moist, sterile protective layer was formed over the burned area, and rapid healing resulted.

The results that we obtained from the latter treatment were far superior to those obtained from the use of the aqueous solution.

Our series of cases is small. However, since in no case treated with gentian violet jelly did the fever rise

and osteo-arthritis, respectively (Garrod,³ 1890; Nichols and Richardson,⁴ 1909).

2. The theory of focal infection, first propounded in America by Frank Billings.⁵

3. The modern bacteriology and serology of arthritis.

4. Investigations into the carbohydrate metabolism in chronic arthritis⁶ and the more recent studies on vitamins in relation to arthritis.⁷

5. New methods in the application of physical therapy, hydrotherapy and climatology.

6. Advances in the surgical and orthopedic treatment of chronic arthritis.

MODERN CLASSIFICATION OF ARTHRITIS

The various classifications of chronic arthritis have always been unsatisfactory because they do not rest on an etiologic basis. Years ago, pathologists pointed out definite anatomic features that differentiated the two great types of joint disease. More recently, radiologists and clinicians have learned to make a distinction between these two types. At a recent meeting in New York of the directors of arthritis clinics, the classification given in table 1 was agreed on.

The unanimous acceptance of this classification by a group of men especially interested in arthritis is significant of the modern trend of thought along these

TABLE 1.—Classification of Arthritis

I. Infectious	a. Rheumatic fever b. Rheumatoid arthritis c. Arthritis caused by specific organism
II. Degenerative	Osteo-arthritis (hypertrophic arthritis)
III. Allergic	Serum sickness
IV. Traumatic	
V. Metabolic	a. Gout b. Scurvy c. Rickets
VI. Neurogenic arthropathy..	Including syringomyelitic, Charcot's, posthemiplegic, etc.

lines. The inclusion of rheumatoid arthritis in the infectious group is particularly important.

It is now common knowledge that rheumatoid arthritis is primarily a disease of the synovial membrane and other soft parts of the joint, while osteo-arthritis is a disorder of the articular cartilage and adjacent bone. Confusion still arises in some cases, as the cartilage and bone may become involved in the later stages of rheumatoid arthritis, while osteo-arthritis may be complicated occasionally by hydrops or by thickening of the synovial membrane. In general, however, rheumatoid arthritis involves the soft tissues, osteo-arthritis the hard tissues of the joint.

Allison and Ghormley⁸ have shown definitely that rheumatoid arthritis has a specific micropathology. In addition to the chronic granulation tissue which occurs in the synovial membrane and which in itself is rather characteristic, there is a more specific lesion consisting

of peculiar clumps of lymphoid cells, which are not encountered in other forms of chronic arthritis. The microscopic changes in the subcutaneous nodule are also highly characteristic, presenting a cellular picture not seen anywhere else.

Osteo-arthritis also has its own morbid anatomy. The fibrillation and thinning of the cartilage, the condensation and eburnation of the bone, are easily recognized in the gross as well as microscopically.

The anatomic differences between rheumatoid arthritis and osteo-arthritis are well brought out by radiography. In the former there is a haziness of the interarticular space and rarefaction of the bone. In the later stages the destruction of cartilage leads to close apposition and possible fusion of the articular surfaces. In osteo-arthritis, bony spiculation and hypertrophy of the articular margins is visible even in the early stages. Later on there is increased osseous overgrowth at the joint margins, accompanied by degeneration and thinning of the cartilage. In osteo-arthritis, fusion of the articular surfaces does not occur.

These fundamental differences between rheumatoid arthritis and osteo-arthritis suggest that they are independent disease entities of different etiology, and such indeed appears to be the case. The etiology of rheumatoid arthritis is still under debate, but certainly the pathologic changes just described are strongly indicative of a chronic infection. Rheumatoid arthritis is an inflammatory disease and physicians long ago learned to look on chronic inflammatory tissue and granulation tissue as expressions of chronic infection. The granulomatous tissue found in the joints of rheumatoid patients is similar in many respects to the inflammatory tissue of tuberculosis and syphilis. Furthermore, the clinical course of rheumatoid arthritis is that of an infectious process. The symptoms are sometimes so acute, particularly in the early stages, that the infectious origin of the disease seems almost undeniable. The migratory pain, swelling and heat in the joints may be quite suggestive of rheumatic fever. The leukocytosis and increase of immature cells in the blood are also indicative of infection. The complications, particularly iritis and subcutaneous nodules, point toward an infectious process. The interesting studies of Klinge⁹ suggest that allergy plays some part in the pathogenesis of rheumatoid arthritis, but if so, it must be a bacterial allergy. There is no evidence of an allergy to food, pollen or animal emanations.

Hypertrophic or osteo-arthritis appears to be a phase of senescence. While any irritant, if continued long enough, will produce hypertrophic changes in the bony margins of a joint, the fact remains that osteo-arthritis, as it appears in middle age, presents the picture of a *degenerative* process akin to arteriosclerosis or gray hair. It is possible, of course, that certain toxic or metabolic factors accelerate the process, but the picture is not that of an infection.

FOCAL INFECTION

The theory of focal infection was originally presented as a contribution to the etiology of rheumatoid arthritis. It is true that many people have foci of infection yet never develop arthritis. Some other factor enters in, possibly a temporary lowering of resistance or some crisis in bacterial allergy. Rheumatoid arthritis has

3. Garrod, A. E.: Treatise on Rheumatism and Rheumatoid Arthritis, 1890.

4. Nichols, E. H., and Richardson, F. L.: Arthritis Deformans, J. M. Research 21: 149 (Sept.) 1909.

5. Billings, Frank: Chronic Focal Infections and Their Etiologic Relations to Arthritis and Nephritis, Arch. Int. Med. 9: 484 (April) 1912.

6. Pemberton, Ralph, and Foster, G. L.: Studies on Arthritis in the Army, Based on Four Hundred Cases, Arch. Int. Med. 25: 231 (March) 1920. Pemberton, Ralph, and Peirce, E. G.: Relation of the Intestinal Tract and Diet in the Treatment of Arthritis, Ann. Int. Med. 5: 1221 (April) 1932.

7. Fletcher, A. A.: Chronic Arthritis, Canad. M. A. J. 12: 633 (Sept.) 1922. Fletcher, A. A., and Graham, Duncan: The Large Bowel in Chronic Arthritis, Am. J. M. Sc. 179: 91 (Jan.) 1930. Fletcher, A. A.: The Nutritional Factor in Chronic Arthritis, J. Lab. & Clin. Med. 15: 1140 (Aug.) 1930.

8. Allison, Nathaniel, and Ghormley, R. K.: Diagnosis in Joint Disease, New York, William Wood & Co., 1931, p. 139.

9. Klinge, F.: Die Eiweissüberempfindlichkeit Gelenke: Experimentelle pathologisch-anatomische Gelenkrheumatismus, Beitr. z. path. Anat. u. 216, 1929-1930.

its perfect analogue in gonococcal arthritis, a well known infection characterized by a primary focus of infection in the genito-urinary tract with metastatic infection in the joints. In these two diseases the focus and the infectious agent are different, the mechanism of infection the same. Rheumatoid arthritis and gonococcal arthritis sometimes present a strikingly similar clinical picture, so similar, in fact, as to be indistinguishable except by bacteriologic and serologic study.

BACTERIOLOGY OF ARTHRITIS

The theory of focal infection focused the attention of investigators on the bacteriology of rheumatoid arthritis, but efforts to isolate an exciting agent have been for the most part unsatisfactory. The streptococcus is the micro-organism most frequently recovered, both from the foci and from the joints, but the percentage of positive results has always been small. Twenty years ago, Davis¹⁰ pointed out the high incidence of hemolytic streptococci in the tonsils of patients with rheumatoid arthritis and produced experimental arthritis in rabbits with these strains. Rose-now¹¹ recovered streptococci from the enlarged lymph nodes of patients with arthritis and, from time to time since then, various observers¹² have succeeded in cultivating streptococci from both the blood stream and the joints in a small percentage of patients with this disease.

In 1929, and again in 1931, I undertook a detailed study of the bacteriology of the blood and joints in

TABLE 2.—Blood Cultures in Rheumatoid Arthritis

POSITIVE RESULTS		Number of Cases	Positive for Streptococcus
Authors			
Cecil, Nicholls and Stainsby: Arch. Int. Med. 43: 571 (May) 1929; Am. J. M. Sc. 181: 12 (Jan.) 1931		154	96 (62.3%)
Margolis and Dorsey: J. Infect. Dis. 46: 442 (June) 1930		89	9 (10.1%)
Kracke and Teasley: J. Lab. & Clin. Med. 16: 169 (Nov.) 1930		120	13 (10.8%)
Klugh, F. G.: South. M. J. 24: 1 (Aug.) 1931		74	53 (71.6%)
Gray, Fendrick and Gowen: Texas State J. Med. 28: 317 (Sept.) 1932		144	85 (59.0%)
Wetherby and Clawson: Arch. Int. Med. 49: 303 (Feb.) 1932		50	25 (50.0%)
Strauss, Aubrey: Virginia M. Monthly 58: 801 (March) 1932		31	2 (6.4%)
Ashworth, O. O.: Virginia M. Monthly 59: 452 (Nov.) 1932		74	31 (41.9%)
Total		736	314 (42.7%)
NEGATIVE RESULTS		Number of Cases	Positive for Streptococcus
Authors			
Nye and Waxelbaum: J. Exper. Med. 52: 885 (Dec.) 1930		21	1 (4.7%)
Bernhardt and Hench: J. Infect. Dis. 49: 489 (Dec.) 1931		20	0
Dawson, Olmstead and Boots: Arch. Int. Med. 49: 173 (Feb.) 1932		80	3 (3.7%)

arthritic patients in collaboration with Nicholls and Stainsby.¹³ A special technic was employed, the chief features of which were the use of the blood clot only for blood cultures, and incubation of blood and joint

cultures for from three to four weeks before discarding them as sterile. In a series of 154 cases of rheumatoid arthritis, streptococci were recovered from the blood in 96, or 62.3 per cent; while in 49 cases in which joint cultures were taken, 35, or 67.3 per cent, yielded streptococci. Most of the strains recovered in this series were attenuated hemolytic streptococci. This study awakened considerable interest in the bacteriology of rheumatoid arthritis and a number of studies along this line have since appeared in the literature, some con-

TABLE 3.—Joint Cultures in Rheumatoid Arthritis

POSITIVE RESULTS		Number of Cases	Positive for Streptococcus
Authors			
Forkner, Shands and Poston: Arch. Int. Med. 42: 675 (Nov.) 1928		63	11 (17.4%)
Cecil, Nicholls and Stainsby: Arch. Int. Med. 43: 571 (May) 1929; Am. J. M. Sc. 181: 12 (Jan.) 1931		49	33 (67.3%)
Margolis and Dorsey: J. Infect. Dis. 46: 442 (June) 1930		25	4 (16.0%)
Gray, Fendrick and Gowen: Texas State J. Med. 28: 317 (Sept.) 1932		16	6 (37.5%)
Strauss, Aubrey: Virginia M. Monthly 58: 801 (March) 1932		10	1 (10.0%)
Total		163	55 (33.7%)
NEGATIVE RESULTS		Number of Cases	Positive for Streptococcus
Authors			
Nye and Waxelbaum: J. Exper. Med. 52: 885 (Dec.) 1930		5	0
Dawson, Olmstead and Boots: Arch. Int. Med. 49: 173 (Feb.) 1932		19	0

firmed and others failing to confirm these observations. In table 2 I have summarized the results of various investigators whose articles have appeared since our own work was published. In most of these reports the technic used for blood and joint cultures has been identical or almost identical with that employed in our original investigations. In table 3 a similar outline has been given of the results obtained by ourselves and other investigators in joint cultures. It is significant that those who obtained positive results with blood cultures were also successful with joint cultures, while those who obtained negative blood cultures also had negative results in the joints. The reader will at once be struck with the disparity in the results obtained by presumably competent bacteriologists in different laboratories. These discordant observations may be due to slight modifications in culture mediums as employed in various laboratories. Even when the same ingredients have been used, slight differences in peptone, beef or water, and differences in methods of titration might account for the success of some laboratories and the failure of others in recovering streptococci from the blood and joints of these patients.

Dawson, Olmstead and Boots¹⁴ imply that the technic employed by Cecil, Nicholls and Stainsby¹³ in their blood cultures was so involved as to call into serious question the significance of all bacterial growth encountered in the cultures, but certainly this criticism could not be used against the joint cultures, which were carried out in the simplest possible manner. It should also be noted that though Dawson, Olmstead and Boots recovered a few green streptococci in their blood cultures from both arthritics and controls, they never succeeded in recovering hemolytic streptococci similar to the "typical strains" of Cecil, Nicholls and Stainsby. The assumption that the streptococci which have been

10. Davis, D. J.: Bacteriological and Experimental Observations on Focal Infections, Arch. Int. Med. 9: 505 (April) 1912; Chronic Streptococcus Arthritis, J. A. M. A. 61: 724 (Sept. 6) 1913.

11. Rosenow, E. C.: The Etiology of Arthritis Deformans, J. A. M. A. 62: 1146 (April 11) 1914.

12. Moon, V. H., and Edwards, S. H.: Results of Blood Cultures in Rheumatoid Arthritis, J. Infect. Dis. 21: 154 (Aug.) 1917. Richards, J. H.: Bacteriologic Studies in Chronic Arthritis and Chorea, J. Bacteriol. 5: 511 (Sept.) 1920. Hadjopoulos, L. G., and Burbank, Reginald: A Preliminary Study Bearing on the Specific Causative Factors of Multiple Infective Arthritis, J. Bone & Joint Surg. 9: 278 (April) 1927.

13. Cecil, R. L.; Nicholls, E. E., and Stainsby, W. J.: The Bacteriology of the Blood and Joints in Chronic Infectious Arthritis, Arch. Int. Med. 43: 571 (May) 1929; The Etiology of Rheumatoid Arthritis, Am. J. M. Sc. 181: 12 (Jan.) 1931.

14. Dawson, M. H.; Olmstead, Miriam, and Boots, R. H.: Bacteriologic Investigations on the Blood, Synovial Fluid and Subcutaneous Nodules in Rheumatoid (Chronic Infectious) Arthritis, Arch. Int. Med. 49: 173 (Feb.) 1932.

recovered from the blood and joints in rheumatoid arthritis are contaminations from the air or skin is not valid for several reasons: (1) Streptococci, especially those of the hemolytic type, are rarely encountered as contaminations in bacteriologic work; (2) if these streptococci were contaminations, they should have occurred just as frequently in controls as in arthritic patients, which was not the case; (3) if these streptococci were contaminations, one would not expect small doses to produce an arthritis in rabbits; (4) the serum of most patients with rheumatoid arthritis contains specific agglutinins for the hemolytic streptococcus. Why assume that the hemolytic streptococci in our blood cultures were contaminations, when the patient's own serum contains specific streptococcic agglutinins for the organism isolated?

I might close this discussion of the bacteriology of arthritis by quoting the comments of Carey Coombs¹⁵ in his review of the bacteriology of rheumatic fever. After reporting his own success in the cultivation of streptococci from various cases of rheumatic fever, he remarks: "We may perhaps sympathize with those whose [bacteriologic] results have been uniformly negative . . . but it is one of those controversies in which a few positive facts may be held to outweigh a number of purely negative ones."

Cecil, Nicholls and Stainsby found that, when rabbits were injected intravenously with small doses of the attenuated hemolytic streptococci which had been recovered from rheumatoid patients, they usually developed arthritis in one or more joints. It was interesting to note a tendency in the streptococci to affect the metacarpophalangeal and interphalangeal joints of the rabbit, thus producing a striking resemblance to the fusiform fingers of the human patient with rheumatoid arthritis. In those rabbits that survived several months of experimental arthritis, the lesions took on a chronic form with beginning ankylosis and deformity, and microscopic sections of the synovial membrane revealed a chronic granulomatous tissue indistinguishable from that of the human rheumatoid joint.

STREPTOCOCCIC AGGLUTININS IN RHEUMATOID ARTHRITIS

One of the most interesting facts in relation to the serology of rheumatoid arthritis is the presence of specific streptococcic agglutinins in the serums of patients with this disease. The presence of these agglutinins was first described by Cecil, Nicholls and Stainsby¹³ in 1931, who showed that most of their "typical strains" of attenuated hemolytic streptococci were agglutinable by rheumatoid serum. In a series of 103 cases of rheumatoid arthritis, 97 showed agglutination with the "typical strain" of streptococcus at a dilution of 1:640 or higher, while in a series of 50 normal controls the serum in every case failed to give a strong agglutination reaction. Of 102 pathologic controls, only 2 patients gave a positive reading at a dilution of 1:640 or higher. In a later report on streptococcic agglutinins in rheumatoid arthritis, Nicholls and Stainsby¹⁶ noted that hemolytic streptococci from other sources, such as scarlet fever and erysipelas, were often agglutinable by arthritic serum, but not to such a high degree as the organism recovered

from rheumatoid patients. Dawson, Olmstead and Boots¹⁷ confirmed the presence of these agglutinins in the serums of patients with rheumatoid arthritis, obtaining positive reactions in 67 per cent of 157 typical cases. They further noted that the reaction still occurred after the streptococci had been killed by heating them from one to two hours at 55 C., and this observation we have recently corroborated in our own laboratory. The capacity of rheumatoid serum to agglutinate killed streptococci would appear to eliminate this reaction from the group of nonspecific streptococcic agglutinins recently described by Tillett and Abernathy¹⁸ in various infectious diseases.

It is quite significant that Dawson, Olmstead and Boots were able to corroborate the presence of these specific agglutinins for hemolytic streptococci in the serum of rheumatoid patients, though they were unable to recover hemolytic streptococci, such as those described by us, in the blood and joints of rheumatoid patients. The presence of these agglutinins in the serum of patients with rheumatoid arthritis has also been confirmed by Gray, Fendrick and Gowen,¹⁹ by Clawson and his co-workers,²⁰ and by Keefer, Myers and Oppel.^{20a}

It seems fair to conclude from these various investigations that the streptococcic agglutinins present in the serum of patients with rheumatoid arthritis are specific agglutinins differing in no essential respect from the specific agglutinins that occur in infections with the typhoid bacillus, the pneumococcus and other pathogenic micro-organisms.

THE SEDIMENTATION RATE IN RHEUMATOID ARTHRITIS

During the past few years a number of papers have appeared on the sedimentation rate in chronic arthritis. The consensus seems to be that the sedimentation rate of the red cells can be used as a method of differentiating the various forms of infection of the joint from the purely degenerative or traumatic processes. Race,²¹ for example, found the sedimentation rate greatly accelerated in rheumatoid arthritis, whereas in osteo-arthritis it was usually normal or nearly so. Dawson, Sia and Boots²² made use of the sedimentation rate as a method of differentiating rheumatoid arthritis from osteo-arthritis. They found that in rheumatoid arthritis it was often greatly increased, usually attaining values exceeding 30 mm. in one hour, whereas in osteo-arthritis the rate was usually normal or only slightly elevated, rarely attaining a value greater than 30 mm. Kahlmeter²³ found the sedimentation rate a useful guide in the differential diagnosis of chronic arthritis, with rates reaching from 40 to 60 mm. in infectious arthritis, but rarely increased in osteo-arthritis and non-

17. Dawson, M. H.; Olmstead, Miriam, and Boots, R. H.: Agglutination Reactions in Rheumatoid Arthritis, *J. Immunol.* **23**: 187 (Sept.) 1932.

18. Tillett, W. S., and Abernathy, T. J.: Serological Reactions with Hemolytic Streptococci in Acute Bacterial Infections, *Bull. Johns Hopkins Hosp.* **50**: 270 (April) 1932.

19. Gray, J. W.; Fendrick, Edward, and Gowen, C. H.: Rheumatic Fever and Rheumatoid Arthritis from the Laboratory Point of View, *Texas State J. Med.* **28**: 317 (Sept.) 1932.

20. Clawson, B. J.; Wetherby, Maenider; Hilbert, E. H., and Hilleboe, H. E.: Streptococcic Agglutination in Chronic Arthritis and Acute Rheumatic Fever, *Am. J. M. Sc.* **184**: 758 (Dec.) 1932.

20a. Keefer, C. S.; Myers, W. K., and Oppel, T. W.: Streptococcal Agglutinins in Patients with Rheumatoid (Atrophic) Arthritis and Acute Rheumatic Fever, *J. Clin. Investigation* **12**: 267 (March) 1933.

21. Race, Joseph: The Suspension Stability Test in Rheumatoid Diseases, *Proc. Roy. Soc. Med.* **22**: 15 (March) 1929.

22. Dawson, M. H.; Sia, R. H. P., and Boots, R. H.: The Sedimentation Rate of the Erythrocytes in Chronic Arthritis, *Proc. Soc. Exper. Biol. & Med.* **27**: 657 (April) 1930.

23. Kahlmeter, G.: The Significance of Serologic and Blood Examinations in Rheumatic Disease, *Acta rheumatol.* **1**: 35 (Oct.) 1931.

15. Coombs, Carey: Rheumatic Heart Disease, New York, William Wood & Co., 1924, p. 12.

16. Nicholls, E. E., and Stainsby, W. J.: Streptococcal Agglutinins in Chronic Infectious Arthritis, *J. Clin. Investigation* **10**: 323 (June) 1931.

articular rheumatism. Forestier,²⁴ in a recently published report, summarizes his experiences with the sedimentation rate in the differential diagnosis of arthritis. In fifty-seven cases of polyarthritis of the inflammatory type, not a single one had a normal rate. Several cases of from ten to fifteen years' duration attained a sedimentation rate of from 80 to 100 mm. In fifty-five cases of osteo-arthritis, 62 per cent showed a normal sedimentation rate. In 30 per cent the rate was very slightly elevated, and there was only one with a rate above 20 mm. This writer concludes that though the sedimentation rate is a nonspecific reaction, it can render definite diagnostic service in the differentiation of the two great types of chronic arthritis. In the Cornell Clinic and in my own laboratory, the method of Rourke and Ernstone²⁵ has been employed. By this method, blood is heparinized and a correction made for the red cell volume. The "corrected sedimentation index" is a reliable index of the severity of infection and tissue damage in the body. The normal limits of the corrected sedimentation index are from 0.08 to 0.4. In my records, a series of fifty-two cases of rheumatoid arthritis have shown an average sedimentation index of 1.1, while in a series of thirty-one cases of osteo-arthritis the average index was only 0.46. In other words, the average index for the rheumatoid cases was almost three times the upper limit of normal, whereas the average index for the osteo-arthritic patients was only slightly above normal. The highest index in the rheumatoid series was 2.1. The highest in the hypertrophic series was 0.9. The rheumatoid patients that gave a low reading either were in an early stage with little or no swelling or were well on the road to recovery.

In conclusion, then, it may be said that the sedimentation test is of distinct value in separating arthritis of the infectious type from degenerative changes in the joint on the one hand, and from traumatic or postural disturbances on the other. Any case presenting joint symptoms, with a sedimentation index above 1, can usually be considered an infectious arthritis, provided other forms of infection have been eliminated.

THE SCHILLING HEMOGRAM

The Schilling hemogram is perhaps the most definite of all gages of the activity of an infectious process. The striking increase of immature polymorphonuclear-cytes (shift to the left) in the circulating blood results from stimulation of the bone marrow, and this stimulation is most conspicuous in acute and chronic infections. Indeed, there are very few conditions other than infection that will induce this reaction. Reznikoff²⁶ mentions hemorrhage, malignant metastases to bone marrow, and extensive destruction of tissue as conditions other than infection which may produce a "shift to the left." If a shift to the left were demonstrable in most cases of rheumatoid arthritis, it would be another bit of presumptive evidence in favor of its infectious origin. Further, it would be, like the sedimentation rate, of practical value in the differentiation of infectious from noninfectious arthritis. What are the actual facts? Unfortunately, very little has appeared in the literature so far on the subject. Gerard and

Bocner²⁷ have reported two cases of chronic arthritis showing a shift to the left, one a case of "multiple arthritis" with a moderate increase of immature cells, and the other with a slight nuclear shift. Piney²⁸ reports a case of septic arthritis of the knee with a marked shift to the left. Eaton²⁹ has recently reported an investigation of the blood cell count in 250 patients with chronic arthritis. In this series, 80 per cent showed either a moderate or a marked shift to the left. Unfortunately the author makes no distinction between rheumatoid and hypertrophic arthritis, so no accurate deductions can be made from his figures.

In some unpublished figures which he has kindly allowed me to use, Dr. Paul Reznikoff³⁰ has found a definite shift to the left in nineteen of twenty-eight cases of rheumatoid arthritis (67.8 per cent). In some of these cases the percentage of immature cells was three or four times the normal.³¹

In a recent series of arthritic patients that I studied in private practice, Schilling counts were made on twenty-three patients with typical rheumatoid arthritis and on twenty-one with osteo-arthritis. In the former group, twelve, or 52 per cent, showed a definite increase of immature cells in the blood. The elimination of several mild cases would have caused the percentage to be considerably higher. In twenty-one patients with osteo-arthritis there were only two, or 9.5 per cent, who showed any increase in the percentage of immature cells, and in both of these instances the increase was only slightly above normal; namely, 12 and 14 per cent, respectively. In ten controls who had no arthritis, none showed an increase in immature forms.

From this brief review, it is evident that the Schilling count may prove to be of considerable value in the differential diagnosis of chronic arthritis, particularly when taken in conjunction with the sedimentation rate and the agglutination reaction.

LABORATORY METHODS IN DIAGNOSIS

From what has been said, it is clear that the modern clinical laboratory can be of great assistance in the differential diagnosis of arthritis. What are the laboratory procedures that can be employed?

1. Excision of tissue from the affected joint. Allison and Ghormley⁸ suggest this as a routine procedure. The synovial membrane in rheumatoid arthritis shows a characteristic pathologic condition, and the same is true of tuberculous and syphilitic joints. Excision of tissue from a joint, however, is a rather complicated procedure.

2. Blood and joint cultures. These may yield valuable information, but the blood cultures require an elaborate technic and considerable time, experience and skill on the part of the bacteriologist.

3. Roentgen examination. The roentgenogram is of considerable help in differentiating infectious from

27. Gerard, J. H., and Boerner, F.: The Significance of "Shift to the Left" in Differential Leukocyte Counts and the Nuclear Index as a Means for Interpreting and Recording, *J. Lab. & Clin. Med.* 16:225 (Dec.) 1930.

28. Piney, Alfred: Recent Advances in Haematology, Philadelphia, P. Blakiston's Son & Co., 1931, p. 241.

29. Eaton, E. R.: Chronic Arthritis: A Report Based on the Study of the Blood-Cell Count in 250 Cases, *J. Am. Institute of Homeopathy* 25:125 (Feb.) 1932.

30. Reznikoff, Paul: Personal communication to the author, November, 1932.

31. Since this article went to press, Steinbrocker and Hartung (The Filament-Nonfilament Count in Chronic Arthritis: An Aid in the Differentiation of Rheumatoid Arthritis and Osteo-Arthritis, *J. A. M. A.* 100:654 [March 4] 1933) have reported their results with the modified Schilling count in the differentiation of rheumatoid arthritis and osteo-arthritis. According to these authors, the immature cells were elevated in 100 per cent of patients with rheumatoid arthritis and in 48 per cent of patients with osteo-arthritis. Their method of counting, however, was somewhat different from that employed by the author of this paper.

24. Forestier, Jacques: L'épreuve de la sédimentation des hématies par la méthode de Westergren, *Monde méd.* 41:708 (July 15) 1931.

25. Rourke, M. Dorothy, and Ernstone, A. C.: A Method for Correcting the Erythrocyte Sedimentation Rate for Variations in the Cell Volume Percentage of Blood, *J. Clin. Investigation* 8:545 (June 20) 1930.

26. Reznikoff, Paul: Immature White Blood Cell Counts in Infectious Diseases, *J. A. M. A.* 93:963 (Sept. 28) 1929.

degenerative and traumatic joint conditions, but it rarely tells the exact etiology of the condition.

4. The sedimentation rate and the Schilling leukocyte count. These are comparatively easy to do and may be of considerable value in indicating an active infection of the joint.

5. Agglutination reactions with *Streptococcus hemolyticus*. These are usually positive in rheumatoid arthritis and practically always negative in degenerative and traumatic cases. The Wassermann test and the gonococcus complement fixation test are valuable in eliminating specific forms of arthritis.

6. A uric acid determination on the blood. This may disclose gout.

It is evident that the modern approach to the diagnosis of rheumatoid arthritis has to do largely with bacteriologic and serologic methods. In this respect it resembles two other great infections, tuberculosis and syphilis. In tuberculosis, examination of the sputum and other body fluids, and tuberculin skin tests have come to be indispensable in the diagnosis of tuberculous disease. In syphilis, the identification of *Spirochaeta pallida* and the Wassermann reaction on the blood and spinal fluid are equally necessary. These three infections might well be looked on as "the great triad" of chronic infections of the temperate zones. It is significant that rheumatoid arthritis is the last of the three to be approached by scientific methods of diagnosis. It appears, however, from what has gone before, that we are now well on our way to this goal.

PROGNOSIS

These newer blood tests can be used with great advantage in following the arthritic patient to determine from time to time the activity of his infection. Here again the situation is analogous to that of the two other great chronic infections, tuberculosis and syphilis. The tuberculous patient is followed with x-rays and with the sputum test for tubercle bacilli. The treatment of the syphilitic patient is checked from time to time with the Wassermann test. The patient with rheumatoid arthritis must be followed in the same way with agglutination and sedimentation tests and possibly with the Schilling count. Cecil, Nicholls and Stainsby³² have stressed the fact that, as the rheumatoid patient improves, the amount of specific streptococcic agglutinins decreases in the blood; and, if recovery occurs, the agglutinins eventually disappear entirely. This point is again emphasized by Stainsby and Nicholls.³² Forestier²⁴ and others have shown a similar tendency on the part of the sedimentation rate to return to normal as the rheumatoid patient improves. No doubt the same will be found to hold true as regards the Schilling count.

The three blood tests just described are all comparatively new and much more will be learned of their actual significance as time goes on. It is already evident, however, that they will play an important part in both the diagnosis and the treatment of rheumatoid arthritis.

MODERN TREATMENT OF ARTHRITIS

The older school of clinicians had to resort to general systemic measures in the treatment of arthritis because their knowledge of the disease was so meager. Forty years ago, Osler¹ wrote with blunt frankness

concerning the treatment of rheumatoid arthritis, saying: "Arthritis deformans is an incurable disease. . . . The best that can be hoped for is a gradual arrest." In order to maintain the general health, he advised plenty of good food, arsenic and iron tonics, and fresh air. Hydrotherapy and massage were also recommended.

Even the most skeptical must admit that we have come a long way in our treatment of arthritis since these words were written. Nothing about rest; nothing about focal infection; nothing about vaccines or vitamins; and almost nothing about physical therapy or heliotherapy.

Certain features of the old school method of treating arthritis deserve especial comment. All cases of chronic arthritis were treated in practically the same way. This was because there was little or no recognition of the different types. The diet featured low proteins. This idea originated from the low protein diet for gout, which was often confused with arthritis. Salicylates were given to patients with rheumatoid arthritis as well as to patients with rheumatic fever, because the two diseases were often confused. It is now known that salicylates will not cure either rheumatoid or hypertrophic arthritis. They are employed merely to relieve pain. Spas were very popular with the old school, and great faith was placed in the curative value of various waters. The value of spas is still recognized but it is now believed that the benefit which patients receive comes from rest and recreation, to say nothing of copious water drinking and hot baths. Orthopedics played an important part in the treatment of arthritis because many patients reached the deforming and ankylosing stage of the disease, when orthopedic measures and appliances were absolutely necessary if they were to retain any function in their limbs. Orthopedics will always have an important rôle in diseases of the joints, but it is obvious that chronic arthritis is primarily a medical disease and that if physicians will learn how to treat it properly there will be less and less demand for orthopedic assistance.

The first point which I wish to stress in the modern treatment of arthritis is that treatment differs for the different types. There are certain measures, such as rest, heat and regulation of personal hygiene, that are indicated for all types of arthritis, but fundamentally the rational treatment of arthritis must be directed toward elimination of the cause, and as it is now generally recognized that chronic arthritis is a general term which covers conditions of various etiologies, each type of arthritis must be treated from this point of view. In the case of osteo-arthritis, the patient is usually overweight, and one of the most important problems will be the reduction of weight by a low calory diet. The basal metabolism in these patients is often below normal, and in such cases thyroid extract will be indicated. Osteo-arthritis usually affects the lumbar spine or the weight-bearing joints. Such being the case, a good deal of attention must be directed to the correction of posture and to other orthopedic measures. Physical therapy in all forms gives these patients much comfort. With the realization that trauma has an important etiologic bearing on hypertrophic arthritis, every effort must be made to eliminate joint strain or faulty body mechanics. Again, in osteo-arthritis the removal of focal infections should be undertaken only with the idea of protecting the patient's health and not with any hope of curing the degenerative process in the joint.

32. Stainsby, W. J., and Nicholls, E. E.: Further Studies on the Agglutination Reaction in Chronic Arthritis, *J. Clin. Investigation*, to be published.

There is no indication for vaccine therapy in hypertrophic arthritis. Arthroplastic operations on a joint affected by hypertrophic arthritis are rarely necessary, because the disease does not produce complete ankylosis.

The modern treatment of rheumatoid arthritis departs from the conventional or old-fashioned methods of treatment in a number of ways. The therapeutic point of view of the present-day practitioner is that which he would have toward any chronic infection. The key-stone of the modern treatment of rheumatoid arthritis is the elimination of infected foci. This is certainly the feeling of most men who are studying this disease in arthritis clinics. It must be admitted that some of those who are interested in the problem feel that too much stress has been placed on the infectious side of rheumatoid arthritis and on focal infection therapy. They believe that focal infection has been overplayed and that more emphasis should now be put on other measures. There may be some basis for this point of view, but on the other hand there is never any reason for bashfulness about the truth. If it is true that rheumatoid arthritis is a chronic infection, I see no reason why one shouldn't stress that point; nor why, if focal infection is sound theory, one shouldn't stress focal infection also. I have always insisted that the elimination of infectious foci was the starting point in the treatment of rheumatoid disease, and I still have that feeling very strongly. The infectious theory of rheumatoid arthritis certainly has more weight than any other theory. There is little to support the idea that it is an endocrine disease or a deficiency disease or that it is due to disturbed metabolism, though some or all of these factors may be predisposing causes. Of course, the rheumatoid patient must be treated as a man who is constitutionally and chronically ill. He should be given rest, proper diet, fresh air, sunlight and vitamins; but it should not be forgotten that rheumatoid arthritis is fundamentally a chronic infection. One certainly doesn't doubt that tuberculosis and syphilis are infectious, though they are treated in many other ways than by vaccines and serums. All forms of therapy are abused at times. This applies to surgery, endocrine therapy and physical therapy; but one wouldn't banish these forms of treatment for that reason. Even though too many good teeth and tonsils may have been extracted, the principle of focal infection therapy is fundamentally sound and is of primary importance in the treatment of rheumatoid arthritis. The failure of all rheumatoid patients to improve after the removal of a focus is not a valid argument against this form of therapy. A focus of infection is like the gate to a garden. If the gate is left open and the chickens get in, a certain number of plants will be destroyed. If the chickens are promptly driven out, the injured plants will soon recover. If, on the other hand, the chickens are allowed to remain in the garden, the plants will be permanently injured. The chickens may be finally expelled, but it is then too late for the flowers to bloom again. The recuperative forces of nature can handle a limited amount of infection. They cannot handle an unlimited amount extending over several years.

Rest.—Swift³³ has stressed the importance of rest in the treatment of rheumatic fever, and certainly rest has come to be looked on as one of the most important factors in the treatment of rheumatoid arthritis. By

rest I mean not only physical rest but rest from business, rest from the ordinary duties and vicissitudes of daily life. It is not saying too much to state that many rheumatoid patients, if taken early, could be cured by rest alone. It is strange how quickly patients accept the idea of a rest cure for tuberculosis yet hesitate to leave home and work for the cure of arthritis. The fear of death, of course, is lacking with the latter disease, but certainly the possibility of permanent crippling is almost as bad. Under rest must also be included freedom from emotional strain. The emotions have much to do with both the onset and recovery in rheumatoid arthritis, and the prognosis will depend in great measure on the capacity of the patient to maintain an emotional equilibrium.

Diet.—The reduction of carbohydrates in the diet of the arthritic patient was first advocated by Pemberton.⁶ I believe this is good practice, particularly if the weight can be maintained in thin patients by the adequate substitution of proteins and fats. Recent investigations suggest that the rationale for carbohydrate reduction lies in the increased consumption of vitamins that goes with the increased intake of protein and fat.

Vitamins.—The investigations of Fletcher⁷ indicate that many patients with chronic arthritis show an atony and dilatation of the colon, and that the administration of vitamin B to such patients will often bring about a return to normal in the contour of the bowel, and a corresponding improvement in the patient. Furthermore, vitamins A, B and C all appear to bear a relation to resistance to infection. For these reasons many practitioners are now giving vitamin A, B and C (and sometimes D) to all patients with rheumatoid arthritis. The effect of this treatment on the general health of the patient is often quite striking, even if the condition of the joints remains unaffected.

Elimination.—Elimination through the bowels, the bladder and the skin is always in order and is accomplished by emphasis on regular movements, copious drinking of water, and frequent sweats. The latter may be achieved by hot packs or by the electric light cabinet. Colonic irrigations should not be employed as a routine. If used at all, they should be limited to one a week.

Physical Therapy.—The chief function of physical therapy in the treatment of rheumatoid arthritis is to improve the circulation, which is proverbially poor in this disease. Heat in all its forms is valuable, and so are exercises and massage. At the present moment there is a wave of enthusiasm for hyperthermia, or artificial fever. My experience with this form of therapy has not been very extensive, but so far the results have been rather disappointing. In some cases, no benefit at all has been noted; in others, the good effect has been only temporary; in a few cases, the improvement appears to have been permanent.

Climate.—I believe in the beneficent quality of a dry hot climate for the patients with arthritis. Patients who fail to improve under the usual forms of treatment should seek Arizona or New Mexico. Unfortunately there are some stubborn cases that do not improve, even in this ideal environment. But many others will.

Vaccines.—What shall be said of vaccines? Some of the workers in the arthritis field seem to bear a grudge against vaccine therapy, a prejudice based on the undeniable fact that vaccines have been too loudly exploited in the treatment of arthritis. But as I have

33. Swift, H. F.: Rheumatic Fever, in Cecil's Text-Book of Medicine, Philadelphia, W. B. Saunders Company, 1930, p. 91.

already remarked in discussing focal infection, the abuse of a form of therapy is no reason for giving it up entirely—as has actually been done with vaccines in some clinics. When in 1929 my co-workers and I³³ succeeded in recovering hemolytic streptococci from the blood and joints of patients with rheumatoid arthritis, and later demonstrated the presence of specific agglutinins in the blood of these patients, vaccines from these "typical strains" of streptococcus were prepared, and during the intervening years they have been tried in a large group of rheumatoid cases. Both the subcutaneous and the intravenous methods have been employed. Undoubtedly a certain number of patients are benefited by both methods of injection; more perhaps by the intravenous than by the subcutaneous route. In my experience the results have been better with private patients than in dispensary practice. No doubt more favorable results would be obtained with vaccines if we had a clearer understanding of their *modus operandi*. At the present time, I usually try intravenous injections of streptococcus vaccine on a patient with rheumatoid arthritis for at least three or four months. If improvement occurs, the treatment is continued. If not, it is discontinued. In using this form of therapy I try to avoid reactions of all kinds.

Drugs.—Drugs can quickly be dismissed. Iron for the anemia, arsenic and strychnine for their tonic effects, the salicylates to ease the pain—that about covers it. Gold thiocyanate has been advocated abroad, but has been disappointing in my hands.

Surgery.—During the past three decades, orthopedic surgery has made great strides in correcting the deformities and ankyloses incident to arthritis. The operations known respectively as synovectomy, arthroplasty and arthrodesis all have an important place in modern joint surgery. Sympathectomy of the cervical or lumbar ganglions has been tried by Rowntree, Adson and Hench³⁴ but has been successful in only a comparatively few cases.

From this brief review of the modern therapy of rheumatoid arthritis it becomes evident that, in spite of advances which have been made in our understanding of the disease, we are still without a specific cure for it. Those who are working on the problem of rheumatoid arthritis may well be envious of their colleagues in the fields of tuberculosis and syphilis, two chronic infections which, when seen early, can be treated quite successfully along well established lines. But perhaps we are nearer to a solution of the arthritis problem than we realize. Certainly the increasing knowledge that is being gained concerning the nature and etiology of the disease will place investigators in a far better position to work out a rational and satisfactory therapy.

SUMMARY

The modern method of approach to the problem of chronic arthritis is based on the following considerations:

1. The majority of cases of chronic arthritis fall into one or the other of two great groups. Rheumatoid arthritis is a clearly defined clinical entity which in most cases can be accurately differentiated from osteoarthritis and from the so-called specific forms of infectious arthritis. Rheumatoid arthritis has its own

pathology and usually runs a characteristic clinical course. Hypertrophic arthritis, on the other hand, appears to be a degenerative, senescent process.

2. Evidence is rapidly accumulating that rheumatoid arthritis (like rheumatic fever) is a chronic infection. This evidence comes from pathologic, bacteriologic, serologic and clinical sources. Allergy probably exerts an influence on the disease, but no more than in other chronic infections.

3. In rheumatoid arthritis a primary focus of infection is the portal of entry for the exciting agent. In respect to its pathogenesis, I consider the disease analogous to gonococcal arthritis, which it often resembles closely. The foci and the infectious agents are different, the mechanism of infection the same.

4. By employing new bacteriologic methods, a number of investigators have succeeded in cultivating streptococci from the blood and joints of patients with rheumatoid arthritis. While these observations have not been confirmed in some laboratories, the presence of specific streptococcal agglutinins in the serum of rheumatoid patients would seem to refute the theory that these micro-organisms are contaminations. Furthermore, the ease with which an experimental arthritis can be produced in rabbits by intravenous injection of these streptococci lends strong support to the proposition that rheumatoid arthritis is a streptococcal infection.

5. The specific streptococcal agglutinins that are found in the serums of a high percentage of patients with rheumatoid arthritis are of considerable value in differentiating rheumatoid arthritis from other forms of chronic arthritis. The sedimentation rate is useful in separating rheumatoid arthritis and the other infectious forms from noninfectious ailments of the joints.

6. By making use of the agglutination and sedimentation tests and the Schilling count, the physician is now in a position not only to make a more accurate classification of arthritic patients but also, by repeating the tests from time to time, to gauge the activity of the disease and the efficacy of treatment.

7. The rational treatment of rheumatoid arthritis embraces removal of foci of infection, emphasis on rest, and a general building-up program, consisting of carefully regulated diet, vitamins, iron and arsenic, and adequate elimination through the intestine, bladder and skin. Streptococcus vaccine, administered intravenously, is of considerable value in many cases, though its *modus operandi* is not yet understood. Physical therapy, if carefully supervised, is useful in stimulating the local and general circulation. In advanced cases, orthopedic surgery may solve an otherwise baffling problem.

33 East Sixty-First Street.

A Million Volt X-Ray.—The most experienced workers with radium and moderate voltage x-ray regard these agents as equally effective under the same conditions. Even the most enthusiastic worker with radium has failed to show that this agent has produced any extraordinary therapeutic effects not shared by x-ray, except when it is possible to obtain an intense local action by insertion into the tissues. It is very doubtful that unusual curative possibilities lie in a million volt x-ray, for six million volt x-ray is available in radium. . . . The physicists, therefore, who have suggested that a million volt x-ray will do wonders in the curing of cancer had better return to their own problem of fracturing the atom. For the real question in the treatment of cancer today is the adjustment of the dosage administered to the biological rhythms in the cancer cell and the surrounding healthy tissues, and of all the variables entering into the practical problem, the wavelength of the radiation as determined by the voltage is probably the least important.—Editorial, *Am. J. Cancer* 17:790 (March) 1933.

34. Rowntree, L. G.; Adson, A. W., and Hench, P. S.: Preliminary Results of Resection of Sympathetic Ganglia and Trunks in Seventeen Cases of Chronic "Infectious" Arthritis, *Ann. Int. Med.* 4:447 (Nov.) 1930.

RETROGRADE INTUSSUSCEPTION OF JEJUNUM: A COMPLICATION OF GASTRO-ENTEROSTOMY

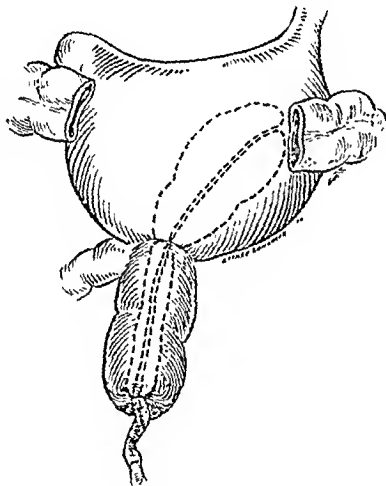
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AND

ROBERT S. BALDWIN, M.D.

CHICAGO

Although gastro-enterostomy was first performed in 1881, it was not until 1917,¹ that is, thirty-seven years later, that the first case of retrograde intussusception of the jejunum was described as a complication of this operation. It probably was Baumann's² article in 1919 with its report of two occurrences in the same patient which really aroused interest in the matter, for within three years eight additional cases were reported. Henschen,³ in 1927, before the fifty-first congress of German surgeons, presented a most complete summary of the knowledge to that time about ascending invaginations complicating stomach operations, and mentioned nearly every case that had previously been written up. Within the last few years many other instances have been reported until up to the present there are thirty-two cases on record, not counting the one we are about to report. The American literature has been particularly barren in this regard and contains only five case reports.⁴ The only review of the literature in an American publication is White and Jankelson's,⁴ in 1928. In view of the fact that their summary is incomplete and that five years has elapsed since its publication, we feel justified in submitting a report of our patient with a brief summary of the entire literature and a complete bibliography.⁵



Condition found at operation.

A man, aged 47, was admitted to our service, Feb. 18, 1931, in apparently very poor condition. His pulse was rapid and thready; his temperature was subnormal. He was not actually vomiting but was emitting a foul-smelling, dark brown fluid from his mouth. With a stomach tube, several quarts of a similar fluid were siphoned out of the stomach. Palpation of the abdomen after lavage was essentially negative except for a slight resistance and tenderness in the upper quadrant. There was no abdominal distention and no masses were felt. There was a scar of a former upper right rectus incision. He was put to bed and kept warm, and an intravenous saline injection was started while the operating room was being prepared.

Following a "stomach operation" (gastro-enterostomy) twelve years previously, the patient had been in excellent con-

dition. Six days before admission to our service he had done a full day's work of heavy manual labor. At the end of the day he experienced a sharp pain in the upper part of the abdomen, which became very severe. He vomited and felt relieved, but within a few hours the pain returned with such severity that he was sent to a nearby hospital. Here he was observed and given a hypodermoclysis. He continued to vomit and by morning the vomitus contained bright red blood in large quantities. Later, the vomitus became feculent. Evidently under the impression that they were dealing with a bleeding gastric ulcer, his physicians continued expectant treatment until finally, after five days of continuous pain and vomiting, he was transferred to us. Under the preoperative diagnosis of a high intestinal obstruction, we performed a laparotomy. Great was our surprise to find that the pathologic condition consisted of a retrograde intussusception of 120 cm., starting in the efferent jejunal loop of the anastomosis about 30 cm. from the stomach and extending through the gastro-enterostomy into the stomach itself. The intussusception was readily disinvaginated, but the intestine was found to be gangrenous. A portion of the bowel was exteriorized, and a jejunostomy was done. The patient continued in poor condition and died two days later.

A review of the literature of retrograde jejunal intussusception following gastro-enterostomy shows that in the thirty-three cases reported, seventeen patients were women and thirteen were men. This is surprising, as the incidence of gastro-enterostomy operations is much greater in males than in females. Intussusception itself occurs more often in males than in females.

The average age was 43 years, the extremes being 21 years¹ and 75 years.⁶

The occurrence of this complication following the primary gastro-enterostomy varied in time from six days⁷ to sixteen years.⁸ The greatest number occurred after the first year and a half. Therefore, it must be considered a late complication of gastro-enterostomy.

The condition has been reported twenty-six times after posterior gastro-enterostomy and six times after anterior gastro-enterostomy. In ten cases an entero-enterostomy had been performed at the time of the gastro-enterostomy.

The size of the stoma has evidently nothing to do with its occurrence, since it has occurred in the presence of a small stoma as well as in the presence of a large one. In one case reported,⁹ the condition recurred following an operation in which the stoma was reduced. The largest stoma reported¹⁰ was 8 cm.; the narrowest, "two fingerbreadths."

The amount of intestine involved varied from 4 or 5 cm.¹¹ to 2 meters,¹² the average being 52 cm.

The base of the intussusception was at the gastro-enterostomy stoma in fourteen persons, at the site of the entero-enterostomy in one, and in the others below the gastro-enterostomy or entero-enterostomy stomas in distances varying from 3 to 50 cm.

Abdominal pain was the first and most striking symptom in all patients. In most instances, it was sudden, moderately severe, and colicky in type, although in many excruciating.

Vomiting occurred in every instance and was persistent. In eighteen instances the vomitus was bloody.

From the Surgical Services of Michael Reese and Cook County hospitals.

1. Steber: München. med. Wchnschr. 64: 648 (May 15) 1917.
2. Baumann, E.: Arch. f. klin. Chir. 111: 504 (Jan. 15) 1919.
3. Henschen, C.: Arch. f. klin. Chir. 148: 730, 1927.
4. White, F. W., and Jankelson, J. R.: New England J. Med. 199: 1189 (Dec. 13) 1928. Shearer, J. P., and Pickford, E. M.: Ann. Surg. 87: 574 (April) 1928. Swartz, David: Canad. M. A. J. 20: 172 (Feb.) 1929. Schilling, Nicholas: Ann. Surg. 95: 958 (June) 1932.
5. Articles not referred to here may be found in the authors' reprints.

6. Angerer, Albin: Zentralbl. f. Chir. 59: 1572 (June 25) 1932.
7. Vulliet, H.: Schweiz. med. Wchnschr. 54: 669 (July 24) 1924.
8. Kopp, J. G.: Lyon chir. 22: 664 (Sept.-Oct.) 1925.
9. Losert, Josef: Beitr. z. klin. Chir. 140: 308 (Feb. 5) 1927.
10. Buriánek, B.: Casop. lek. česk. 68: 433 (April 5) 1929.
11. Shearer and Pickford.
12. Pellegrini, A.: Arch. ed atti d. Soc. ital. di chir. 36: 1081, 1930; abstr. Zentralorg. f. die ges. Chir. 52: 135, 1931.

12. Drummond, H.: Brit. J. Surg. 11: 79 (July) 1923.

It is important to note that the blood always made its appearance late and never in the early vomitus.

The condition of the patient, in almost all instances, on admission to the hospital was recorded as being "poor" or "in shock"; in two it was "fair," and in only one, "good."

A tumor mass in the upper part of the abdomen was palpated in eleven patients. In seven there was abdominal resistance to palpation, and in seven the abdomen was "soft and no masses" were felt.

The correct diagnosis was made before operation in only three instances.¹³ In two¹⁴ of these the patients themselves made the diagnosis because these were recurrences (the only recurrences in the series). In only one⁶ did the physician assert that he made the diagnosis. Most of the patients were operated on, as was ours, under the all inclusive preoperative diagnosis of "high intestinal obstruction."

One patient¹⁵ was subjected to roentgen study before operation but the results could not be interpreted until after the abdomen was opened.

In the majority of the cases reported, the indications for immediate operation were so apparent that laboratory tests which would delay operation did not seem justified. In only five cases was immediate operation postponed. In two of these, the erroneous diagnosis of a bleeding peptic ulcer was made (based on the bloody vomitus).

Operations were performed on twenty-eight patients with eight deaths and nineteen recoveries (in one report the result was not given). In the five patients who were not operated on, the condition was discovered at autopsy. It is interesting to note that in one patient¹⁶ the intussuscepted intestine in the stomach was erroneously considered to be malignant tumor. The patient was treated conservatively and the true condition was not established until the postmortem examination.

The length of time from the onset of symptoms to the time of operation varied from five hours¹⁷ to six or more days. Of the fifteen patients operated on within forty-eight hours after the onset, fourteen recovered and one died; this death occurred fourteen days after operation from bronchopneumonia. Of the ten patients operated on after two days, five died.

We have not included in this summary four instances of prolapse of the two jejunal loops through the gastro-enterostomy stoma because we do not consider such a condition retrograde intussusception, properly speaking. Vulleit,⁷ Delfino,¹⁸ Lewisohn,¹⁹ and Bevan²⁰ have reported the cases.

SUMMARY

A case of retrograde intussusception of the jejunum into the stomach followed a gastro-enterostomy performed twelve years ago.

A review of the literature revealed thirty-two similar cases.

We believe that the condition is not as rare as one would suppose from the scarcity of these reports but that it has been frequently overlooked.

Early operation consisting of simple reduction of the intussusception is over 90 per cent successful.

104 South Michigan Avenue.

SYPHILITIC BURSOPATHY (LUETIC BURSOPATHY OF VERNEUIL)

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AND

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Verneuil, in 1868, first reported four cases of syphilitic bursopathy, which he described as "hydropisie des gaines tendineuses des extenseurs des doigts dans syphilis secondaire."

Fournier, Moreau, Chouet and Voisin followed in the recognition of syphilitic involvement of the bursae. In 1876, Keyes collected fourteen cases and, in 1884, Finger in an extensive article described this infection of the bursae. Büchler, in 1889, reported four cases, and Velpeau treated it with potassium iodide and mercury, not mentioning it as syphilis.

Dr. Halsted at Johns Hopkins reported one case and outlined the bursae involved in the order of frequency; namely, the prepatellar, the subpatellar, the semimembranous, that between the rectus and the

crureus, the anserine bursa, that of the extensor digitorum communis, the bursae of the toes and the flexors of the fingers, and that at the radial border of the first phalanx of the forefinger.

Halsted's descriptive picture was that of an indolent disorder of the bursae involving most often the knees, particularly in women. The disease is quite independent of syphilitic arthritis.



Fig. 1.—Ulceration on left knee.

the bursae involved being most often those unconnected with the joints, and the neighboring joints themselves being entirely free from involvement with little or no pain or functional disability. He based his diagnosis on:

1. History of coexistent syphilis.
2. Spontaneous development of bursopathy with a particular traumatic history.
3. Slow evolution and chronic course.
4. Marked absence of pain and disability.
5. Symmetry of the bursopathy.
6. Site.
7. Absence of other causes.
8. Absence of joint involvement.
9. Inefficiency of nonspecific treatment.

Churchman, in 1909, reported a case and in a comprehensive review of the literature compiled twenty-six cases and gave this entity the name of luetic bursopathy of Verneuil. H. L. Barnard, R. W. Scott, W. P. Coues, W. Harttung, Herman Goodman and Howard Fox reported cases, bringing the total number to thirty-four.

13. Baumann,² Buriánek,⁹ Angerer.⁶

14. Baumann,² Buriánek.⁹

15. von Brunn, M.: Beitr. z. klin. Chir. 132: 106, 1924.

16. Lundberg, S.: Acta chir. Scandinav. 54: 423 (April) 1922.

17. Buriánek.⁹

18. Delfino, E. A.: Deutsche Ztschr. f. Chir. 174: 69, 1922.

19. Lewisohn, Richard: Ann. Surg. 76: 543 (Oct.) 1922.

20. Bevan, A. D.: S. Clin. North America 8: 469 (June) 1928.

In 1924, John E. Lane¹ of New Haven, Conn., reported and described two cases. During the same year Moreau stated in his thesis that (1) syphilis seems to be able to invade all the tissues and to invade them at all ages; (2) the subcutaneous bursae and those of the tendons present not only manifestations of secondary but also of tertiary syphilis.

Garner and Schoch² reported two cases, in October, 1931, bringing the total to thirty-eight.

REPORT OF A CASE

Mrs. S. E. L., aged 68, was referred to us with a symmetrical swelling of the two knees, the left knee presenting a sluggish ulceration at the base of which was a grayish slough. At its upper border was a papillomatous growth, 2.5 cm. in diameter and raised about 1.5 cm. above the surface, involving the prepatellar area with a smaller satellite ulceration at its inferior border. This ulcer was distinctly the classic punched out lesion in appearance. Another rounded ulceration of the extensor surface of the right forearm at its upper third of 2 cm. in diameter was soft and boggy, containing a seropurulent substance. This gave no evidence of healing and later broke down, leaving a punched out ulceration. The duration of these ulcerations had been three months. The analysis of the

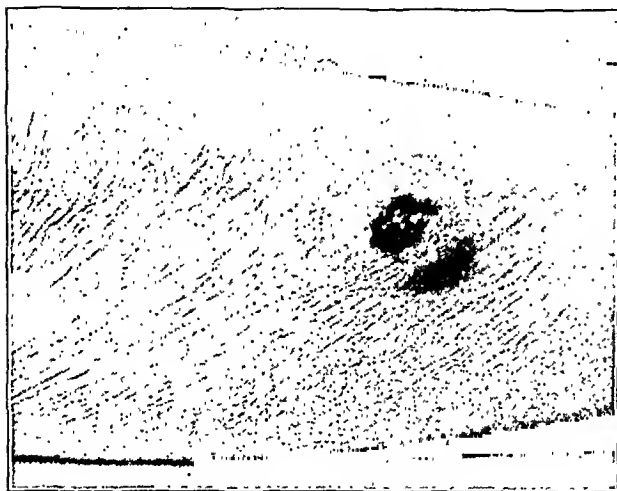


Fig. 2.—Ulceration on right forearm.

urine was negative but the Wassermann and Kahn tests of the blood were both four plus.

Examination of the spinal fluid was as follows: erythrocytes, 0; leukocytes, 0; globulin (Pandy), very slight increase; sugar, 58 mg. per hundred cubic centimeters; Kahn reaction, negative.

Pupillary reaction to light and in accommodation was sluggish. Deafness was marked. Nocturnal headache over a period of five years was reported. There was a history of previous lesions that did not ulcerate but subsided without any anti-syphilitic medication. There was no history of arthritis. The patient had no children but she had had a miscarriage at the age of 24.

There was a definite and interesting history of traumatism of the knee, in that she had been in the habit of closing a door for years with her left knee.

COMMENT

Since this case fulfils the requirements of Halsted's nine diagnostic points, we are offering it as another to the list of the luetic bursopathy of Verneuil.

The accompanying illustrations show clearly the lesions as described. Because of the paucity of reported

cases of syphilitic bursopathy, only thirty-four cases being reported in the literature to date, and of the dearth of such lesions referred to in textbooks, it seemed that the report of another case is worthy of record.

18 Asylum Street.

PERMANENT ENLARGEMENT OF THE LIPS AND FACE

SECONDARY TO RECURRING SWELLINGS AND ASSOCIATED WITH FACIAL PARALYSIS: A CLINICAL ENTITY

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During the last twenty-two years, sixty-seven patients presenting chronic, noninflammatory, permanent enlargement of the lips and face have been observed in the Mayo Clinic. This condition has followed repeated swellings and has been associated with facial paralysis in thirteen cases. The condition comes on suddenly in a manner similar to angioneurotic edema, and then, with recurrence of attacks, increasing enlargement is a residue. The condition is apparently a clinical entity, but we have been able to find only slight mention of it in the literature. The results of treatment of the condition have been satisfactory.

LITERATURE

The acute, circumscribed swelling described by Quincke¹ in 1882 corresponds with the onset of the condition, but Quincke did not mention the residual enlargement. In Quincke's edema, although the swelling has a preference for certain regions, such as the eyelids, cheeks, lips and hands, it does not always recur in the same area. Melkersson² reported a case of recurring facial paralysis associated with angioneurotic edema of the upper lip, with residual swelling of the lip. Rosenthal³ described four patients who had bilateral facial palsy associated with acute, recurring edema of the face. Although he mentioned slight residual swelling in two cases, he thought it of little importance and did not suggest treatment.

PRESENT INVESTIGATION

History.—The ages of the patients at the occurrence of the first swelling ranged from 4 to 54 years. Twenty-nine of the patients were less than 20 years of age, and fifty were less than 30 years of age. In more detail the incidence by decades of life was as follows: 1 to 10 years, three cases; 11 to 20 years, twenty-six cases; 21 to 30 years, twenty-one cases; 31 to 40 years, ten cases; 41 to 50 years, five cases, and 51 to 60 years, two cases. There were forty-six males and twenty-one females.

From the Section on Laryngology, Oral and Plastic Surgery, the Mayo Clinic.

Read before the American Laryngological Association, Washington, D. C., May 8, 1933.

1. Quincke, H.: Ueber akutes umschriebenes Hautödem, *Monatsh. f. prakt. Dermatol.* 1: 129-131 (July) 1882.

2. Melkersson, E.: A Case of Recurrent Facial Paralysis with Angioneurotic Edema, *Hygica* 90: 737-741 (Sept. 31) 1928.

3. Rosenthal, Curt: Gemeinsames Auftreten von (rezidivierender familiärer) Facialislähmung, angioneurotischem Gesichtssödem und Lingua plicata in Arthritis-Familien, *Ztschr. f. d. ges. Neurol. u. Psychiat.* 131: 475-501, 1931.

1. Lane, J. E.: Syphilitic Bursitis, *J. A. M. A.* 82: 852 (March 15) 1924.

2. Garner, V. C., and Schoch, A. G.: Syphilitic Bursopathy of Verneuil, *Arch. Dermat. & Syph.* 24: 591 (Oct.) 1931.

The patients gave fairly uniform histories of swelling of the lips and face, coming on rather suddenly, with no signs of local inflammation or premonitory symptoms. In the first attack the patient might awaken in the morning with the upper and lower lip, or both, three or four times the normal size. In a few cases the attacks were preceded by a cold and indisposition, and in others there was a relationship to migraine or menstruation. One patient stated that the attacks were preceded by headache and migraine. Seven patients gave histories of migraine. Seasickness, influenza, overwork, loss of sleep, trauma and exposure to cold were causes that were given for the swelling of the lips and face. Three patients gave histories of trauma to the upper lip; one patient stated that a brother had the same condition. There was no history of relationship to the eating of any particular food other than that one patient stated that the attacks followed eating strawberries. No seasonal relationship was noted.

The patients had no discomfort, except from enlargement of the part and a feeling of fullness.

lips and face for twenty-five years and that no residual swelling had appeared until two years previous to his examination.

Facial palsy might accompany the swelling or might antedate it by many years. One patient, aged 31 years, stated that the first attack of facial palsy occurred when she was 4 years of age, twenty-two years before the swelling of her face had been noted, and she had had five attacks of facial palsy involving each side of the face. Facial palsy occurred twenty-five years before the swelling in one case, sixteen years before it in one case, ten years before it in one case, six years before it in two cases, five years before it in two cases, three years before it in one case, and six months before it in one case.

Clinical Observations.—A soft, nonpitting, smooth, diffuse enlargement, usually involving the lips, was noted. The regions involved by swelling, more than one region in most cases, were as follows: upper lip, fifty-two cases; cheeks, thirty-five cases; lower lip, thirty cases; nose, seven cases; tongue, six cases; eye-



Fig. 1.—A woman, aged 25, had recurring swellings of the face for ten years, from three to six attacks a year, lasting two or three days, leaving the residual swelling of the lips and cheeks.



Fig. 2.—A man, aged 41, had recurring swellings of the lips for seven years. The right side of the face was completely paralyzed nine days previous to examination. Enlargement of the lips and cheeks may be noted.



Fig. 3.—A woman, aged 31, had facial paralysis at the age of 4 years, with four subsequent attacks. Ten years prior to examination, paralysis of the right side of the face developed, with considerable residual paralysis. There were recurring swellings of the upper lip of four and a half years' duration. Residual enlargement of the upper lip has been present for four years. The patient is attempting to close the eyes.

There was no swelling of any part of the body other than the face, mouth and throat. In a few hours to two days the maximal enlargement occurred, and then gradually receded. The condition might last only a few hours or might continue for three weeks. Regions first involved by swelling were as follows: upper lip, thirty-eight cases; cheeks, eleven cases; lower lip, nine cases; nose, four cases; eyelids, three cases, and upper alveolar process, two cases. After the first attack, the lips and face usually returned to their normal appearance, but a slight residual swelling might be left even after the first attack. Repetition of this swelling occurred from three weeks to six months later, affecting the same portions or spreading to other parts of the face.

Usually, after the second or the third attack, swelling remained, and after each succeeding attack, the enlargement of the region increased. One patient, however, stated that he had had the recurring swelling of the

lips, five cases; upper alveolar process, two cases, and larynx, forehead and soft palate, each one case. The lips might be found three or four times their normal size. The skin over the involved region appeared normal and did not pit on pressure; there was no change in the temperature of the region. In the lips, most of the swelling seemed to occur inside, rolling the lips outward. The lips might be chapped and fissured from the enlargement.

Peripheral facial paralysis occurred in thirteen cases, and in three of these the condition was bilateral. It is apparently caused by swelling about the nerve. The facial paralysis might clear completely, as in Bell's palsy, or it might leave some motor disturbance due to faulty regeneration.

Specimens of tissue were taken for biopsy in a few cases before treatment, but nothing was found other than edematous tissue containing lymphocytes. After

the patients had received repeated treatment, biopsy disclosed fibrous and inflammatory changes in the tissue, as would be expected. General examination in these cases revealed nothing of note that might bear any relationship to the condition. In the cases in which tests for allergy were made, metabolic rates were



Fig. 4.—A man, aged 25, had left facial paralysis at the age of 12 years, paralysis of the right side of the face at 25 years, and swellings of the upper lip for ten years. *A*, enlargement of the lips and complete paralysis on the right side of the face may be noted. *B*, appearance six years later, after treatment and excision of portions of the lips and cheeks.

determined and the state of the sinuses was investigated, with negative results.

Etiology.—The cause of the condition is not known. Its similarity, in some respects, to angioneurotic edema, has been mentioned. However, angioneurotic edema occurs elsewhere in the body than the face at the same time that the face is affected, but in this group of cases only the face, mouth and throat were affected.



Fig. 5.—A woman, aged 19, had facial paralysis at the age of 2 years, and swelling of the nose at the age of 7 years. In the twelve years previous to examination there had been swellings of the lips every three weeks, and during the previous two years the cheeks were also swollen with the attacks. *A*, partial paralysis on the right side of the face may be noted. *B*, appearance two years and nine months following treatment and excision of tissue from the inside of the lips and cheeks.

The question of lymphangitis or recurring erysipelas can be excluded.

In seven cases, enlargement was associated with a cold or exposure to cold, or followed attacks of

influenza. The usual condition that is thought of as edema causes tenseness of the skin and pitting on pressure, but the residual swelling in these cases is soft and elastic. There is no change in the skin itself. The fact that thirteen of the sixty-seven patients gave histories of facial paralysis or had facial paralysis at the time of examination would indicate a common cause for the recurring swelling and the paralysis.

Suggestions concerning the causative factors of this condition are purely theoretical. Just what produces the increased amount of lymph in the part is indeterminate. One must consider, first, a disturbance of trophic, vasomotor or motor nerves; secondly, alteration in the metabolism or state of nutrition of the tissues, changing the power of the cell to attract, give off or retain fluid; thirdly, some chemical disturbance in the cell, of a complicated nature; that changes the fluid balance, and, fourthly, a possible so-called vital secretory activity of the endothelial cells.

Treatment.—Treatment of this condition has consisted of injection of boiling water into the involved parts and irradiation externally over the face. The



Fig. 6.—A youth, aged 16 years: *A*, with permanent enlargement of the upper lip following swelling; *B*, appearance one year and ten months after treatment and excision of a portion of the lip.

patient is anesthetized with nitrous oxide, and the face is then covered with a thick coating of petrolatum, so that any drops of boiling water which fall cannot burn the skin. A metal syringe is used, and a few cubic centimeters of the boiling water is injected into many portions of the involved region. Boiling water is not used about the skin of the nose or the eyelids. This treatment causes considerable local reaction, so that the following day the part is markedly swollen. In a few days the swelling begins to reduce, and it gradually clears. Treatment with radium is given over the involved region, from 3,000 to 4,000 mg. hours with 2 mm. of lead and 1 inch of wood screening being used. The patient is then allowed to go home and is told to come back in three months for observation.

In some cases one treatment accomplished a great deal in preventing recurrence of the swelling, but in others four or five treatments were necessary. When there is no tendency to recurrence of the swelling for a period of six months, the superfluous tissue of the lips or cheeks may be excised, in order to shape up the part to its original size. We have seen patients who

have undergone excision of tissue without the tendency of the condition to recur being stopped before operation; permanent enlargement of the parts has been much greater than before operation was performed. It is essential, first, to eliminate the recurring swelling before attempting operation. Just how the treatment



Fig. 7.—A man, aged 55: *A*, swellings of the eyelids, cheeks and upper lip of fourteen months' duration; permanent enlargement of the eyelids, cheeks and upper lip may be noted. *B*, appearance two years and ten months following treatment and excision of superfluous tissue about the eyelids and cheeks.

stops the swelling is indeterminate. It may be that production of fibrosis in the lymph structures, or change in the cells themselves, prevents swelling of the tissues. The results of treatment have been satisfactory.

UNILATERAL CHOKED DISK DUE TO CHRONIC TONSILLAR INFECTION

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PHILADELPHIA

AND

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The occurrence of choked disk (papilledema) is in the vast majority of cases, probably 90 per cent, due to cerebral neoplasm. Unilateral choking of a disk may also be found in a patient harboring a brain tumor, although as a rule involvement of the other disk soon occurs. However, two recent cases of brain tumor which have come under our observation and which were situated at the base of the right frontal lobe showed unilateral choking of the right disk of 5 and 4 diopters, respectively; the left disk in both cases was normal. When one is confronted with a case showing unilateral or bilateral choking of the disks, the initial and most important step is to rule out brain tumor; when that has been done as completely as possible, search must be made for the more uncommon causes, such as acute and chronic infections, toxemias, certain diseases of unknown etiology (such as multiple sclerosis) and syphilis. Our concern in this presentation is with unilateral choked disk due to chronic infection in the tonsils, of which we have seen two instances. We will not discuss the occurrence of optic neuritis, which is sometimes seen in sinus infection, especially that of

the sphenoids and ethmoids. Foci of infection in other parts of the body may also implicate the optic nerves.

Hansell,¹ in 1886, reported two cases of acutely choked disk with sudden loss of vision and a rapid return to normal with treatment; Hansell thought the cause was a rheumatic infection. One of these cases was unilateral. Hansell thought that the papilledema was due to the exudation of serum into the fibrous coat of the nerve producing sufficient local pressure to cause swelling. De Schweinitz,² in 1888, related a case of acute unilateral choked disk which at that time he thought due to exposure. He reviewed the case in 1896 and then considered it to be due to a rheumatic infection. Suker³ cited a case of unilateral optic neuritis, the result of chronic infection in the tonsils. The case was that of a young woman who, in March, 1917, noticed a blurring of vision of the left eye, which went on in the course of a few days to a loss of vision in that eye. The left disk was markedly swollen, although Suker does not give the exact amount of the swelling. Seventy-two hours after the tonsils were removed, vision in the affected eye was normal, and in four weeks the swelling in the disk had disappeared.

Ball,⁴ Carpenter⁵ and Harry⁶ have reported similar cases, although in some of them the optic nerves were involved bilaterally. Harry states that the characteristic features of choked disk due to chronic tonsillitis are its acuteness, its intensity, its unilateral character and the completeness with which it clears up after the removal of the tonsils. In Carpenter's case, reported in 1918, blindness in one eye disappeared after the removal of the tonsil on the same side. It is, of course, a well known fact that a chronic focal infection can produce involvement of a single joint, and it is therefore not unreasonable to assume that a focal infection might implicate one optic nerve. The investigations of Brown and Irons⁷ and of Rosenow⁸ show clearly the frequency with which iritis and other ocular infections may be due to streptococci and other organisms. We are fully aware that it is possible for any chronic infection to be the cause of optic neuritis, but the two cases that are reported here are clearly due to infection in the tonsils.

REPORT OF CASES

CASE 1.—History.—Mrs. M., a white woman, aged 52, was referred by Drs. John L. Spangler and Chapin Carpenter, March 19, 1931. Her personal, past medical and family histories were unimportant except for the fact that she had had repeated attacks of tonsillitis, and for the past few years mild arthritis in both hands. March 12, she noticed, while reading the morning paper, that the vision in the left eye was poor. She had no other symptoms, such as headache, vomiting or double vision.

Examination.—The general and neurologic examinations were negative except for badly diseased tonsils, signs of mild chronic arthritis in the joints of the hands, a systolic murmur at the apex, and pain when the left frontal region was percussed. Dr. Carpenter examined her eyes on March 12 and reported

1. Hansell, H. F.: Acute Optic Neuritis of Rheumatic Origin, *M. News* 48: 144-146, 1886.

2. de Schweinitz, G. E.: Acute Unilateral Optic Neuritis, *Tr. Philadelphia County M. Soc.* 9: 247-252, 1888; Acute Unilateral Optic Neuritis, *Tr. Philadelphia Poly. Clin.* 5: 491-495, 1896.

3. Suker, G. F.: Unilateral Optic Neuritis from Tonsillar Infection, *Ophthalm. Rec.* 26: 278-280 (June) 1917.

4. Ball, G. H.: Bilateral Optic Neuritis Due to Tonsillar Infection, *Arch. Ophthalm.* 49: 335, 1920.

5. Carpenter: *Am. J. Ophthalm.*, November, 1918, p. 787.

6. Harry, P. A.: Papillitis Due to Tonsillitis: Three Cases, *Brit. J. Ophthalm.* 6: 216 (May) 1922.

7. Brown, E. V. L., and Irons, E. E.: Etiology of Iritis, *Tr. Am. Ophthalm. Soc.*, 1918.

8. Rosenow, E. C.: Iritis and Other Ocular Lesions on Intravenous Injections of Streptococci, *J. Infect. Dis.*, 1915, pp. 403-407.

that there were no external abnormalities; the ocular movements were full; tension and pupillary reactions were normal; vision, corrected, was: right eye 5/5, left eye 5/12. Ophthalmoscopic investigation of the right eye showed that the media were clear and the nerve normal; of the left, the media were clear and the nerve a choking of 2 diopters. The vessels were congested and buried at the margin of the disk, but there were no hemorrhages. Two days later, hemorrhages appeared on the disk. The right eye remained free of involvement. The visual fields showed a central scotoma for colors and white. A week later Dr. Carpenter reported fresh hemorrhages and an increase of the swelling to 4 diopters.

The roentgenogram of the skull by Dr. George Pillmore was negative for evidence of increased pressure changes and sinus disease. The size and shape of the sella turcica were normal. The count, chemical examination and Wassermann test of the blood and examinations of the spinal fluid and urine were negative except that the total protein content of the spinal fluid was increased to 3 units (normal, 1.5 units).

Clinical Course and Outcome.—In the absence of signs indicative of brain tumor, of sinus disease, of syphilis and of any toxic factor such as might occur in kidney disease, it was decided to remove the diseased tonsils of the patient, which was done by Dr. George Coates, April 1. The patient's vision almost immediately began to improve. Dr. Carpenter reexamined her, April 15, and reported that the choking had subsided to 3 diopters; no fresh hemorrhages had occurred; the exudate had been absorbed and the outline of the disk was almost visible in the upper nasal portion; vision was corrected to 5/9, and small test type could be read but with some central blurring. July 9, Dr. Carpenter reported that vision of the left eye was corrected to 20/15, and that the visual field in the left eye was almost normal, there being only a slight central scotoma. The hemorrhages had been completely absorbed but some atrophic changes in the choroid remained. About 0.5 diopter of swelling remained.

CASE 2.—History.—Mrs. J., a white woman, aged 28, was referred by Dr. H. G. von Goldberg, Oct. 19, 1931. Her personal, family and past medical histories had no bearing on her present illness, although she had had tonsillitis on one occasion. Four weeks before the examination, when she was perfectly well, she awoke one morning with pain in and over the right eye, and the vision of the right eye was blurred. The pain lasted two days, although at the time she was seen she complained of pain when she moved the right eye. She had seen double on one or two occasions.

Examinations.—The general and neurologic examinations were negative with the exception of the presence of enlarged and diseased tonsils. Dr. von Goldberg reported that when he first saw her, October 10, vision in the right eye was 6/12, and in the left, 6/6.

Ophthalmoscopic examinations revealed that the media of the right eye were clear; the disk was elevated 4 diopters; the veins were engorged, small areas of blood dotting the nerve head; the perivascular reflex was entirely obscured and the surrounding retina was hazy. The left eye was normal and there was no ocular palsy. October 17, the swelling of the nerve head had increased to 6 diopters and the vision had dropped to three lines.

Clinical Course and Outcome.—The patient was referred to the University Hospital for investigation. Dr. Karl Houser could find no evidence of sinus disease, and Dr. Pancoast's roentgen examination of the sinuses was negative. The roentgenogram of the skull was negative for increased pressure, and the pituitary fossa showed no deformity or enlargement. Urinalysis and examinations of the blood and of the spinal fluid were negative except that the total protein in the spinal fluid was 2.5 units. In view of the experience with case 1, and the negative signs for syphilis, sinus disease and brain tumor, a tonsillectomy was done. The tonsils were removed by Dr. Karl Houser, October 23. A week later, the patient reported a definite improvement in her vision. Dr. von Goldberg noted that on October 31 the vision in the right eye had improved

to 6/8; the swelling in the nerve head had subsided to 3 diopters, with corresponding improvement in the surrounding area. November 7, two weeks after the removal of the tonsils and seven weeks after the onset of the trouble, the vision in the right eye was 6/6, the nerve margins were clearly defined except for a small area above and to the nasal side, the hemorrhages on the nerve head were absorbed, and vascular and other changes had returned to normal. The patient was last heard from, Jan. 21, 1933, and reported that her vision had returned to normal.

COMMENT

There are indeed few bodily complaints that cause as much concern to the patient as disturbance of vision and the fear of blindness that frequently ensues when vision is affected. For a patient, therefore, suddenly to lose vision in one eye is an alarming state of affairs, and when optic neuritis or choked disk is discovered as the cause of that condition, the responsibility of the physician under whose care such a patient falls is great. The triad of symptoms headache, vomiting and choked disks is commonly seen in brain tumor. As mentioned before, the choking of the disks in brain tumor is usually bilateral, and while an attack of sudden temporary blindness may and does occur, the loss of vision in brain tumor is usually gradual. Furthermore, there is a possibility for perfect vision to be found in a patient with a high degree of choking of the disks, if that choking is due to tumor. The characteristic features in our cases and also in cases reported by others are sudden loss of vision, the rapid increase in the swelling and the unilateral involvement, although some have reported bilateral involvement. The removal of the tonsils, in both of our cases badly diseased, produced prompt improvement and a return in a relatively short time to a normal vision and normal state of the involved nerve.

No time should be lost in arriving at a diagnosis. Whether the choking of the disks is unilateral or bilateral, it is imperative to eliminate brain tumor as a probability. When that has been done, the possibility of chronic focal infection should be speedily investigated. If swelling of one or both optic nerves is the only physical sign present, and if the patient does not have headache or other symptoms suggestive of brain tumor, he should not be rushed into an encephalography, a ventriculography or a decompression operation. Cases of the kind reported have probably helped to swell the number of cases referred to so naively by the neurosurgeons as "pseudotumor."

133 South Thirty-Sixth Street.

The Demands of the Patient.—The demands of the intelligent consumer of medical care are in general two; the one, the protection of himself from the acts of other individuals, and the other, his own individual care. For the former, he must rely on the action of the state, for it only has the necessary power of control and functions thus through its public health services. They justifiably invade the individual rights only when public safety is at stake, for the care of the individual per se is a matter of his own business, not that of the state. The demands of the consumer as regards himself alone are two: the one, the prevention of his own illness; the other, the treatment of it. These cannot be segregated, however, into such definite categories, for the treatment of disease is frequently prophylactic against further disease, and that which is meant by prevention of illness is many times the early detection of it. Therefore, the producer of both types of care is preferably the same person, thus simplifying the consumer-producer relationship.—Harvey, S. C.: *Oikonomia Medika*, *Yale J. Biol. & Med.* 5:323 (March) 1933.

Clinical Notes, Suggestions and New Instruments

THE CHANGE PRODUCED IN FAT TISSUE BY THE USE OF INSULIN IN MALNUTRITION

HARRY BLOTNER, M.D., BOSTON

The use of insulin to produce gain in weight in certain cases of nondiabetic malnutrition has proved of great value. The nature of the added weight, however, has been subject to speculation. Falta,¹ who was the first to use insulin for this purpose in adults, believed that the added weight was not due to edema, because he gave theophylline to patients receiving the drug without producing any diuresis. On the other hand, Feissly² thought that the administration of insulin caused first the development of increased turgor and subsequently the formation of fat. Contrary to what one might expect, Löw and Kréma³ found a decrease in the fat and carbohydrate content in the liver of insulinized rats and concluded from this that insulin directs the peroral fat to be stored in the fat depots. Recently, an extensive literature on the use of insulin in nondiabetic malnutrition has accumulated, yet so far no observations have been reported that illustrate the histologic changes occurring in the skin and subcutaneous tissues of patients made to gain weight by this method. This would appear to be an interesting phase of the subject on which to acquire

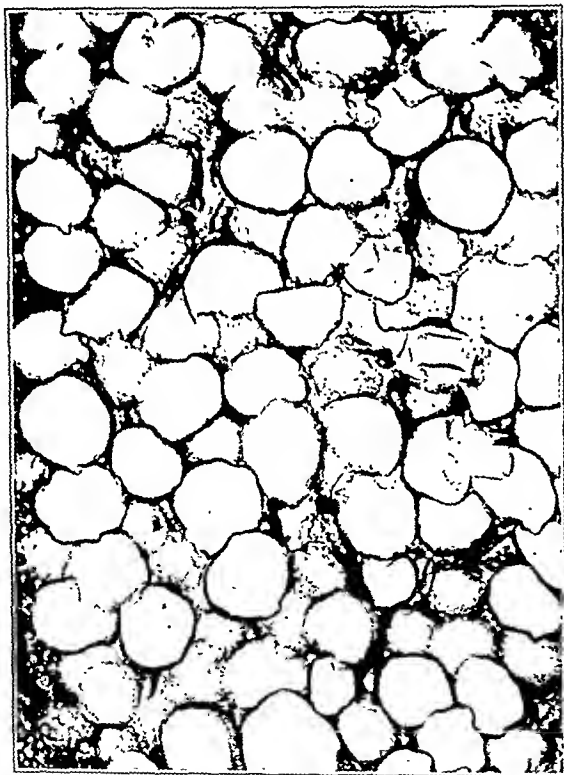


Fig. 1.—Subcutaneous fat cells in malnutrition. The cells are small and are surrounded by a thick membrane; $\times 300$.

data. In this paper, therefore, are reported observations on the changes in the subcutaneous fat and glycogen deposits in the skin and subcutaneous tissue observed to occur in one patient during a period of considerable gain in weight induced by insulin administration.

From the Medical Service of the Peter Bent Brigham Hospital.

1. Falta, W.: Ueber Mastkuren mit Insulin über insulinäre Fettsucht, *Wien. klin. Wchnschr.* 35: 757 (July 2) 1925.
2. Feissly, R.: Traitement insulinique des états de dénutrition chez les sujets non diabétiques, *Presse méd.* 34: 196 (Feb. 13) 1926.
3. Löw, A., and Kréma, A.: Inselorgan und Fettstoffwechsel der Leber, *Klin. Wchnschr.* 11: 584 (April 2) 1932.

PLAN OF INVESTIGATION

This study was made on a woman, aged 34, who first came to the Peter Bent Brigham Hospital in 1927 with tabes dorsalis. She was treated for tabes until 1931, by which time her blood and spinal fluid tests were entirely normal. In 1932 she returned to the hospital, worried because she was so thin. Her usual weight was 103 pounds (46.8 Kg.), but she had lost weight during a period of several years until now she weighed only 80½ pounds (36.6 Kg.). The general physical examination, except for the characteristic reflex changes of an old tabes, was negative. She was 61 inches (155 cm.) tall.



Fig. 2.—Subcutaneous fat cells in malnutrition after a gain in weight of 6.4 Kg. induced by insulin. The cells are much larger, and the membrane surrounding them is much thinner; $\times 300$.

She was taught to inject insulin and took 10 or 15 units three times a day during the period of observation, which lasted from June 10 to Nov. 30, 1932. The patient gave her consent to the removal of fat tissue for study, understanding what was to be done and that it was her voluntary contribution to advancement of knowledge. Three specimens of tissue, each measuring approximately 3.5 cm. by 1 cm., were excised under local anesthesia from the abdominal wall, the first specimen being removed before the use of insulin was started, the second ten weeks later and the third twenty-four weeks later. When the second biopsy was made, the patient had gained 14 pounds (6.4 Kg.), and when the third was made she had gained 21 pounds (9.6 Kg.). The specimens were taken from the abdominal wall transversely over the rectus muscle at the level of the umbilicus and included skin and subcutaneous tissue down to the fascia of the muscle.

Sections for histologic study were prepared by the department of pathology, Zenker fixation, paraffin embedding and eosin-methylene blue staining being used. Best's carmine solution was used for the glycogen stain. The depth of the subcutaneous fat was measured, and the average diameter of the subcutaneous fat cells was estimated with a standard micrometer disk. To make this determination, 300 cells in each section were measured.

HISTOLOGIC CHANGES WITH INSULIN THERAPY

After insulin injections were begun and the patient began to gain weight, the depth of the subcutaneous fat and the size of

the fat cells increased remarkably. Before insulin treatment, the fat measured only 3 mm. in depth, and the average diameter of the fat cells in it was 35 microns. The largest diameter of any single fat cell observed was 53 microns, and the smallest 20 microns, most cells appearing of about the average size.

After the patient had gained 14 pounds, the depth of fat had increased to 12 mm., and the average diameter of the fat cells was now 69.6 microns. The largest cell observed



Fig. 3.—Subcutaneous fat cells in malnutrition after a gain in weight of 9.6 Kg. induced by insulin. The cells continue to increase in size and the membrane surrounding them remains thin; X 300.

measured 121 and the smallest 33 microns. When the patient had gained 21 pounds, the depth of the fat layer had increased to 16 mm. and the average diameter of the fat cells had increased to 79.8 microns. The largest cell observed measured 125 microns and the smallest, 33 microns. The majority of the fat cells after insulin treatment appeared to be of about the same size.

Before insulin was administered, the fat cells were small and thick walled. Between the cells was a fair amount of loose

TABLE 1.—The Average Size of Three Hundred Fat Cells in a Case of Malnutrition

	Average Diameter of Fat Cells, Microns	Largest Fat Cell, Microns	Smallest Fat Cell, Microns	Depth of Fat Tissue, Millimeters	Weight of Patient, Pounds
Before insulin treatment.....	35.0	53	20	3	80½
After 10 weeks of insulin treatment.....	69.6	121	33	12	94
After 24 weeks of insulin treatment.....	79.8	125	33	16	101½

textured connective tissue. After the patient had gained weight, the fat cells became so large and distended that the walls looked like a thin membrane, and there was practically no tissue to be seen between them. Apparently this is not a process peculiar to insulin fattening, because, according to Bremer,⁴ the reverse process takes place in extreme emaciation.

4. Bremer, J. L.: A Textbook of Histology, ed. 2, Philadelphia, P. Blakiston's Son & Co., 1930, p. 93.

The sections stained for glycogen showed a deposit of glycogen in the hair follicles only, before and during insulin treatment. This deposit, possibly, appeared to be somewhat greater after the period of insulin administration than previously, though the finding was not especially convincing.

SUMMARY

A study was made on the effect of insulin on the subcutaneous fat and the glycogen in the skin of a case of nondiabetic malnutrition.

After the patient gained 21 pounds on insulin therapy, the depth of the subcutaneous fat of the abdomen increased from 3 mm. to 16 mm., and the average diameter of each fat cell had increased from 35 microns to 79.8 microns.

Before insulin administration, the fat cells appeared small and with a thick wall. After the patient gained with insulin, the fat cells became large and distended, so that the walls looked like a thin membrane.

There was no notable change in the glycogen in the skin.

Apparently, the gain in weight resulting from insulin treatment is due to an actual increase in the fat deposit.

23 Bay State Road.

MUMMIFICATION OF LEFT ARM FOLLOWING MAMMARY CARCINOMA

OTTO VAN DER VELDE, M.D., HOLLAND, MICH.

The case reported here is one which I have recently observed and studied and which I have discussed with other surgeons and pathologists, none of whom could recall a parallel case either from their own experience or from their knowledge of the literature. The case was of great interest to me because of its rarity and also from the point of view of development.

REPORT OF CASE

Mrs. D., a white woman, aged 65, whose previous history had been negative, had come under my observation at various times for numerous minor complaints, but all were of psychogenic origin. She was the type of patient who enjoyed poor health. However, in August, 1928, she presented herself with what was considered a fairly early carcinoma of the left breast. There were no apparent signs of axillary metastases. Operation was advised, and a complete amputation was done elsewhere by a competent surgeon, but apparently the axillary glands were not disturbed. An uneventful recovery ensued. She was given some roentgen therapy and advised to report occasionally for observation. For a few years no signs of recurrence appeared. The patient considered herself cured.

In July, 1931, three years following the operation, she presented herself with metastases in the left axilla. Instead of following medical advice, she visited two "fake" cancer clinics with the usual result.



Appearance of mummified arm at time of amputation.

In June, 1932, almost four years following the operation, the left hand began to swell. Edema rapidly developed in the entire arm, with large surface blebs. Two weeks later the finger tips began to turn black, and in two weeks more the entire arm was gangrenous. There was a sharp line of demarcation above which the gangrene did not extend. The arm was kept wrapped in sterile towels; the skin remained unbroken, and consequently the gangrenous state remained dry. There was no odor, and at no time did the patient reveal any signs of toxic absorption. Amputation was finally performed, August 6, with only a scalpel and a saw. No anesthesia was

required. The patient's ears were tightly plugged with cotton. No bleeding was encountered, and no attempt to suture the stump was made. The patient lived for about two months and died from pulmonary metastases.

The accompanying illustration reveals the specimen as it appeared at the time of amputation. It has been properly prepared and preserved in a museum of pathological specimens.

COMMENT

There are many interesting angles in this case. Complete gangrene of the arm from metastatic carcinoma of the breast is a very rare occurrence. That this gangrene should remain entirely dry and that mummification should take place before the death of the patient are also unique. Furthermore, it seems strange that the patient exhibited no toxic signs. However, when one visualizes what occurred in the process of development, explanations of these various phenomena are simple. Apparently, the axillary metastases developed a complete annular constriction of the axillary blood supply distal to the point at which the acromiothoracic artery arises from the subclavian to form the collateral circulation of the shoulder. Close study will reveal that the venous blood supply, being the more easily compressed, was first shut off and that the edema with huge surface blebs followed. As the metastatic growth increased, the arterial supply was finally obstructed, and the gangrene ensued. The entire process was limited by the collateral circulation of the shoulder. This is demonstrated by the sharp line of demarcation and its location, extending down almost to the lower part of the deltoid muscle on the outer surface but high up in the axilla. The collateral circulation of the shoulder, it will be remembered, is formed by anastomosis of the acromiothoracic artery, which arises from the subclavian artery, with the anterior and posterior circumflex arteries, and with branches of the suprascapular artery.

Apparently the process, as described, in no way directly contributed to the death. Amputation was done for the sake of convenience in the care of the patient and to relieve the psychic effect that this "withered" arm was having on her. Death finally came because of metastases elsewhere.

35 West Eighth Street.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.
PAUL NICHOLAS LEECH, Secretary.

CALCIUM PEROXIDE-R. & H.; OXONE; SODIUM DIOXIDE DENTAL-R. & H. AND SODIUM PEROXIDE-R. & H. OMITTED FROM N. N. R.

Calcium Peroxide-R. & H. was accepted by the Council as a brand of calcium peroxide-N. N. R. Sodium Dioxide, Dental-R. & H., Sodium Peroxide-R. & H. and Oxone were accepted as brands of sodium peroxide-N. N. R.

The period for which these products of the Roessler & Hasslacher Chemical Co., Inc., were accepted, expired with the close of 1930. When requested, at that time, to submit the current advertising for the products, the firm sent a booklet entitled "Active Oxygen Products," which makes reference to products which do not stand accepted for New and Nonofficial Remedies: namely, magnesium peroxide, zinc peroxide and strontium peroxide, which were omitted from New and Nonofficial Remedies because deemed to be of little value, and zinc perborate, which has not even been considered for acceptance. The firm was informed that this constitutes a conflict with the Council's rule concerning the use of accepted products to advertise unaccepted products and was informed, further, that the accepted products would be eligible for continued acceptance provided this conflict were removed by revision of the advertising booklet. The firm made no reply at this time and failed to reply to a similar request in 1931. In view of the firm's failure to cooperate, the Council omitted Calcium Peroxide-R. & H., Oxone, Sodium Dioxide Dental-R. & H. and Sodium Peroxide-R. & H. from New and Nonofficial Remedies.

Committee on Foods

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary.

WORCESTER IODIZED SALT

Manufacturer.—Worcester Salt Company, New York City.

Description.—Table salt containing added calcium phosphate (0.9 per cent), potassium iodide (0.02 per cent) and sodium bicarbonate (0.08 per cent).

Manufacture.—Worcester Plain Salt (see below) is admixed in a batch mixer with the stated proportions of calcium phosphate, potassium iodide and sodium bicarbonate and automatically packed in cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	0.04
Sodium chloride (NaCl) by difference	95.52
Calcium phosphate	0.96
Calcium sulphate	0.41
Calcium chloride	0.01
Potassium iodide	0.02
Sodium bicarbonate	0.08

Micro-Organisms.—

Bacteria colonies per gram	2
Mold colonies per gram	1

Claims of Manufacturer.—The iodized salt is for all table and cooking uses of salt. The added calcium phosphate tends to preserve its free running qualities; the sodium bicarbonate tends to prevent the loss of iodine. The iodine in the salt aids in preventing goiter caused by insufficient iodine in the diet. Used daily as the only salt on the table and in cooking, it richly supplements the iodine of diets deficient in that element and thus helps to protect against goiter.

WORCESTER SALT

Manufacturer.—Worcester Salt Company, New York City.

Description.—Table and cooking salt.

Manufacture.—The salt is obtained by evaporation of salt brine prepared from rock salt deposits in the earth. Water is pumped down to the salt deposits; the resultant brine is pumped to the surface, treated with lime and sodium carbonate, and stored in tanks to permit insoluble matter to settle out. The brine is filtered and concentrated in "vacuum" evaporators; the salt crystals drop to the bottom and are removed. The salt crystals are centrifugated to remove excess moisture and then dried in rotary driers. The dried salt is screened to grade the crystals according to size. Salt of a definite granulation is packed in paper lined barrels, bags, wax-paper wrapped cartons and asphaltum lined cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	0.04
Sodium chloride (NaCl) (by difference)	99.6
Calcium sulphate	0.32
Calcium chloride	0.02

WORCESTER IVORY SALT

(1 Per Cent Added Calcium Phosphate)

Manufacturer.—Worcester Salt Company, New York City.

Description.—Table salt containing 1 per cent added calcium phosphate, which tends to preserve its free running properties.

Manufacture.—The preparation is the same as that described for Worcester Salt (see above) excepting that 1 per cent calcium phosphate is added to the final salt before packing.

Analysis (submitted by manufacturer).—

	per cent
Moisture	0.04
Calcium phosphate	1.0
Calcium sulphate	0.45
Calcium chloride	0.03
Sodium chloride (NaCl) (by difference)	98.5

Claims of Manufacturer.—A "free running" salt.

NUCOA OLEOMARGARINE (Contains Not Over 0.1 per Cent Benzoate of Soda)

Manufacturer.—The Best Foods, Incorporated, New York City.

Description.—Margarine containing hydrogenated coconut and peanut oils, pasteurized milk cultured with lactic acid bacilli, salt, and sodium benzoate (not over 0.1 per cent).

Manufacture.—The hydrogenated coconut and peanut oils, manufactured by the company from the respective refined oils, are blended in such proportions as will yield a margarine of desired melting point, filtered, and deodorized by superheated steam. The blend is churned with pasteurized milk cultured with a carefully controlled strain of lactic acid bacteria, salt and a small quantity of sodium benzoate; it is cooled, allowed to stand for tempering, is reworked and is finally printed into one pound blocks, which are packed in cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	12.0–14.0
Ash (salt free)	0.05–0.10
Sodium chloride (NaCl)	2.5–3.5
Fat	81.0–83.0
Protein (N × 6.38)	0.8–1.0
Carbohydrates (by difference) (average)	1.0
Sodium benzoate	0.06–0.09

Calories.—7.5 per gram; 213 per ounce.

Claims of Manufacturer.—For use as a bread spread and as a fat or shortening in baking and cooking or for table purposes.

HEKMAN'S DUTCH TEA RUSKS

Manufacturer.—The Dutch Tea Rusk Company, Holland, Mich.

Description.—Round slices of toast prepared from flour, water, sucrose, shortening, malt extract, milk, eggs, yeast, salt, lactose, baking soda and lecithin.

Manufacture.—A dough of the indicated ingredients is fermented by the usual bakery procedure and divided into buns. Each bun is separately baked in round covered pans; the baked buns are halved, toasted and packed in cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	5.5
Ash	0.7
Fat (method I for bread)	8.7
Protein (N × 6.25)	12.3
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference) ..	72.6

Calories.—4.2 per gram; 119 per ounce.

Claims of Manufacturer.—For the general diet as well as that of infants and invalids.

ROTH'S BAMBY WHOLE WHEAT AND WHITE FLOUR BREAD

(55 Per Cent Whole Wheat, 45 Per Cent White Flour)

Manufacturer.—The A. Roth Baking Company, Newport, Ky.

Description.—A whole wheat and white flour bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from whole wheat flour, water, white flour, sucrose, lard, yeast, lactic acid, salt, molasses, malt syrup and yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	35.8
Ash	1.5
Fat	2.5
Protein (N × 6.25)	11.1
Crude fiber	0.5
Carbohydrates other than crude fiber (by difference) ..	48.6

Calories.—2.6 per gram; 74 per ounce.

AMBROSIA FLOUR (FAMILY) BLEACHED

Manufacturer.—Texas Star Flour Mills, Galveston, Texas.

Description.—An "all purpose" hard wheat patent flour; bleached.

Manufacture.—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with nitrogen trichloride (one-ninth ounce per 196 pounds) and with a mixture of calcium phosphate and benzoyl peroxide (1 part to 50,000 parts of flour).

Claims of Manufacturer.—The flour is designed for general baking in the home.

AMBROSIA FLOUR (BAKERS) BLEACHED

Manufacturer.—Texas Star Flour Mills, Galveston, Texas.

Description.—A hard winter wheat "patent" flour; bleached.

Manufacture.—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with nitrogen trichloride (one-tenth ounce per 196 pounds) and with a mixture of calcium phosphate and benzoyl peroxide (1 part to 50,000 parts of flour).

Claims of Manufacturer.—The flour is designed for commercial bread bakeries.

WHOLE BRAN

(Flavored with Malt Syrup, Sugar and Salt)

Manufacturer.—Postum Company, Inc., Battle Creek, Mich., division of General Foods Corporation, New York.

Description.—Steam cooked wheat bran compressed into small thin strands; flavored with malt syrup, sucrose and salt.

Manufacture.—The formula ingredients are steam cooked; the cooked mass is forced through dye plates with small perforations and thereby molded into thin strands, which are cut, toasted and packaged in wax paper inserts in cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	1.1
Ash	7.2
Sodium chloride (NaCl)	2.2
Fat (ether extraction method)	3.0
Protein (N × 6.31)	13.9
Reducing sugars as maltose	9.0
Sucrose (copper reduction method)	6.7
Crude fiber	8.3
Carbohydrates other than crude fiber (by difference) ..	66.5
Calcium (Ca)	0.11
Phosphorus (P)	1.16
Iron (Fe)	0.025

Calories.—3.5 per gram; 99 per ounce.

Vitamins.—Assay shows the bran to be a good source of vitamin B; 0.6 gram contains one vitamin B unit (Chase and Sherman).

Claims of Manufacturer.—For addition to foods to increase indigestible cellulose bulk to counteract constipation due to insufficient bulk in the diet. Without adding materially to the total calories in the adult diet, the bran contributes substantially to the vitamin B content.

JERRY'S FAMOUS RYE BREAD

Manufacturer.—Jerry's Baking Company, Terre Haute, Ind.

Description.—A rye bread prepared by the straight dough method (method described in THE JOURNAL, March 18, 1932, p. 889); prepared from "patent" and "clear" wheat flours, dark rye flour, water, potato flour, rye flavor (a syrup of ground caraway and anise seeds and licorice), salt, yeast, malt syrup and sucrose.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	37.2
Ash	2.2
Fat	1.7
Protein (N × 6.25)	9.9
Crude fiber	0.5
Carbohydrates other than crude fiber (by difference) ..	48.5

Calories.—2.5 per gram; 71 per ounce.

PFIZER CALCIUM GLUCONATE

Manufacturer.—Charles Pfizer and Company, Inc., New York.

Description.—Calcium gluconate: $(C_6H_{11}O_7)_2Ca \cdot H_2O$.

Manufacture.—The calcium gluconate is prepared by neutralizing gluconic acid with calcium carbonate or calcium hydroxide. The precipitate of calcium gluconate is filtered out, air dried and packed in various types of containers.

The gluconic acid is prepared by the oxidizing fermentation of dextrose by a bacterium as described for Glucono-Delta Lactone (THE JOURNAL, Feb. 25, 1933, p. 577).

Analysis (submitted by manufacturer).—

	per cent
Sugars, not more than	0.05
Calcium (Ca)	8.9
Calcium gluconate (monohydrate)	99.5

Calories.—2.7 per gram; 77 per ounce. (International Critical Tables 5:166.)

Claims of Manufacturer.—For increasing the calcium content of refined foods.

MEDICAL LICENSURE STATISTICS FOR 1932

ANNUAL PRESENTATION OF LICENSURE STATISTICS BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION INCLUDING DATA REGARDING STATE MEDICAL LICENSING BOARDS, STATE BASIC SCIENCE BOARDS AND THE NATIONAL BOARD OF MEDICAL EXAMINERS

Official reports for the compilation of the data presented herewith have been contributed by the medical licensing boards of all states, the District of Columbia, Alaska, the Canal Zone, Hawaii and Puerto Rico. Included in these statistics are figures from three homeopathic boards (Connecticut, Delaware and Maryland) and from the eclectic board of Arkansas. There are also presented figures from the seven basic science boards (Arkansas, Connecticut, District of Columbia, Minnesota, Nebraska, Washington and Wisconsin) and the National Board of Medical Examiners. Every effort has been made to insure accuracy. The officers of these boards deserve much praise for the completion of their reports, and acknowledgment is here made for their splendid cooperation. In the publication of these statistics, the endeavor has been to show the actual facts, a knowledge of which is always beneficial. The information should be of service to medical schools and licensing boards, as well as to the public.

TOTAL REGISTRATION

During 1932, 6,945 physicians and 103 osteopaths were licensed to practice as physicians and surgeons, and 14 osteopaths to practice osteopathy and surgery. The methods by which these candidates were certified are described in the following paragraphs.

A comparison of the number registered in each state by examination, and reciprocity and endorsement, is shown in table 1. This table shows also the number registered by these methods who were graduates of approved medical schools. For the purpose of this tabulation, those who completed their work since 1907 in institutions classified by the Council as A and B are listed under "Graduates of Approved Medical Schools." Under "Others" are listed graduates prior to 1907, when the first classification of medical schools was compiled, undergraduates, osteopaths, class C graduates and those of institutions which since December, 1928, when the classification A, B and C was discontinued, have been considered as unapproved. There were 5,191 candidates licensed by examination, as compared with 1,871 by reciprocity and endorsement. The largest number of candidates, 973, were licensed in New York, followed by California with 503; Pennsylvania, 497; Illinois, 438; and Ohio, 399. All other states licensed fewer than 300. The lowest number (10) were registered in Wyoming. Ten physicians were licensed upon recommendation of homeopathic boards. Connecticut licensed 2 physicians by examination and 1 by endorsement, Delaware licensed 2 by examination, and 2 by reciprocity, and Maryland licensed 2 by examination and 1 by endorsement. None were licensed by the homeopathic board of Arkansas. The only eclectic board in existence, Arkansas, licensed one candidate by reciprocity. The figures for the United States territories and possessions include: Alaska, 3 by examination; Canal Zone, 9 by endorsement; Hawaii, 19 by examination, 4 by reciprocity, and Puerto Rico, 10 by examination and 5 by endorsement.

CANDIDATES EXAMINED

Table 2 gives the results (passed and failed) for all candidates who took examinations in 1932. There were 5,624 examined, of whom 5,191 passed and 433 (7.7 per cent) failed. These came from 65 approved medical schools in the United States and 9 in Canada, 58 medical schools of other countries, 16 medical

TABLE 1.—Registration by State Boards—1932

States	Examination			Reciprocity and Endorsement			Total Registered
	Graduates of Approved Medical Schools	Others		Graduates of Approved Medical Schools	Others		
Alabama.....	13	1		19	1		34
Alaska.....	14	0		0	0		14
Arizona.....	42	1		8	2		53
Arkansas.....	279	64		134	20		503
California.....	47	12		26	2		87
Canada.....	67	1		70	0		138
Connecticut.....	6	0		16	2		24
Delaware.....	40	3		17	0		60
District of Columbia.....	61	5		0	0		66
Florida.....	90	1		12	0		112
Idaho.....	5	0		10	1		16
Illinois.....	322	38		73	5		438
Indiana.....	100	1		24	0		124
Iowa.....	115	0		42	1		158
Kansas.....	76	0		33	5		119
Kentucky.....	67	1		27	0		95
Louisiana.....	110	2		6	0		117
Maine.....	29	1		14	0		44
Massachusetts.....	169	7		25	1		202
Michigan.....	140	59		55	0		253
Minnesota.....	215	4		60	4		283
Mississippi.....	141	1		19	1		162
Missouri.....	27	0		19	0		46
Montana.....	136	0		59	6		221
Nebraska.....	8	0		13	1		22
Nevada.....	67	0		8	0		75
New Hampshire.....	4	0		10	1		15
New Jersey.....	9	0		16	1		26
New Mexico.....	108	5		141	7		261
New York.....	3	1		10	5		19
North Carolina.....	674	43		212	44		973
North Dakota.....	86	0		23	0		109
Ohio.....	21	0		5	0		26
Oklahoma.....	270	0		126	3		399
Oregon.....	60	0		21	1		82
Pennsylvania.....	31	0		21	0		52
Rhode Island.....	454	4		39	0		497
South Carolina.....	39	1		8	0		40
South Dakota.....	11	1		12	2		26
Tennessee.....	165	0		13	0		178
Texas.....	140	7		67	16		230
Utah.....	24	0		5	0		29
Vermont.....	21	2		15	2		38
Virginia.....	115	0		23	2		140
Washington.....	40	2		20	0		71
West Virginia.....	25	1		28	0		54
Wyoming.....	112	4		63	11		190
Unapproved.....	2	0		8	0		10
Totals.....	30	2		12	5		53
Totals.....	4,917	274		1,709	162		7,062
	5,191			1,871			

schools now extinct, 7 unapproved institutions and several osteopathic colleges. There were 4,981 graduates of approved medical schools in the United States examined, of whom 3.9 per cent failed; 141 Canadian graduates examined, 12.8 per cent of whom failed; 181 foreign graduates, with 47.5 per cent of failures; 23 who graduated from schools now extinct, with 30.4 per cent of failures, and 298 from unapproved colleges,

(CONTINUED ON PAGE 1242)

Marginal Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	Marginal Number	
NAME OF COLLEGE	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Marginal Number	
1 University of Arkansas School of Medicine.....	P	F	F	F	P	F	P	F	P	F	P	P	P	P	P	P	P	P	P	P	P	P	1	
2 College of Medical Evangelists.....		1	0	1	0	6	2	1				1	0	2	0					1	0		2	
3 Stanford University School of Medicine.....				3	8	0																	3	
4 University of California Medical School.....				4	8	3																	4	
5 University of Colorado School of Medicine.....				4	0	4	3	0						1	0								5	
6 Yale University School of Medicine.....				2	0			9	0					1	0				1	0	2	0	6	
7 Georgetown University School of Medicine.....						5	4		9	1									2	3	0	3	7	
8 George Washington University School of Medicine.....				1	0		1	1	14	0			1	0					1	2	0	3	8	
9 Howard University College of Medicine.....								3	0		1	6	0		1	1			6	0	2	0	9	
10 Emory University School of Medicine.....				1	0		1	0		8	0	3	8	0					1	0		2	10	
11 University of Georgia Medical Department.....									8	0	3	8	0									1	11	
12 Loyola University School of Medicine.....				5	1		1	0					6	9	1	5	0	2	0		1	0	12	
13 Northwestern University Medical School.....		1	0		2	0			5	0			5	3	1	3	0	1	0	4	0		13	
14 University of Chicago, Rush Medical College.....	3	0	2	0		1	3	0	2	0		1	0					3	0		1	0	14	
15 University of Chicago, School of Medicine of the Division of the Biological Sciences.....												6	1									2	15	
16 University of Illinois College of Medicine.....				2	1			1	0		2	0		9	6			1	0		2	0	16	
17 Indiana University School of Medicine.....				1	0			1	0	1	0			9	0	1					1	0	17	
18 State University of Iowa College of Medicine.....		2	0		6	0					2	0				9	7	0					18	
19 University of Kansas School of Medicine.....				3	0												4	5	0		2	0	19	
20 University of Louisville School of Medicine.....	1	0	2	0			0	1		3	0			2	0			5	6	0	1	0	20	
21 Tulane University of Louisiana School of Medicine.....	5	0	1	0	1	0				9	0						9	0			1	0	21	
22 Johns Hopkins University School of Medicine.....				3	0		2	0		1	0					1	0			4	0	0	22	
23 Univ. of Md. School of Med. & College of P. & S.....						0	1		1	0	1	0							6	1	0		23	
24 Boston University School of Medicine.....				1	1		5	0									4	0		1	8	3	24	
25 Harvard University Medical School.....				4	0	1	0	3	0		1	0					1	0		2	8	4	25	
26 Tufts College Medical School.....				1	0		1	0				2	0				1	0		5	9	5	26	
27 Detroit College of Medicine and Surgery.....								0	1													5	27	
28 University of Michigan Medical School.....		1	0		6	0			1	0									1	0		3	28	
29 University of Minnesota Medical School.....		1	1		3	0						4	0		1	0						1	29	
30 St. Louis University School of Medicine.....		1	0		8	0		1	1		2	0		1	0	1	0				1	1	30	
31 Washington University School of Medicine.....				6	0							2	0			2	0		1	0			31	
32 Creighton University School of Medicine.....				8	2								2	0	3	0	7	0	2	0	1	0	32	
33 University of Nebraska College of Medicine.....				6	0							1	0		3	0	4	0					33	
34 Albany Medical.....																							34	
35 Columbia Univer.....				1	0		1	0		2	0	2	0		1	0			1	0		1	35	
36 Cornell Univer.....				1	0							1	0										36	
37 Long Island College of Medicine.....					2	0																	37	
38 New York Homeo. Med. Coll. and Flower Hospital.....					2	0																	38	
39 Syracuse University College of Medicine.....								1	0														39	
40 University and Bellevue Hospital Medical College.....					4	0											1	0					40	
41 University of Buffalo School of Medicine.....														1	0				1	0		1	41	
42 University of Rochester School of Medicine.....					1	0																	42	
43 Duke University School of Medicine.....																							43	
44 Ohio State University College of Medicine.....				1	0																		44	
45 University of Cincinnati College of Medicine.....				3	0					1	0						2	0					1	45
46 Western Reserve University School of Medicine.....										1	0												46	
47 University of Oklahoma School of Medicine.....																							47	
48 University of Oregon Medical School.....				5	0							1	0										1	48
49 Hahnemann Medical College and Hospital of Phila.....				2	0			2	0		1	0					1	0		1	0	2	0	49
50 Jefferson Medical College of Philadelphia.....		1	1			4	0	1	0		1	1							1	0	1	0	50	
51 Temple University School.....				1	0			1	0														51	
52 University of Pennsylvania.....				1	0		2	0						4	0				1	0	3	0	4	52
53 University of Pittsburgh.....						1	0														1	0	1	53
54 Woman's Medical College of Pennsylvania.....								1	0														54	
55 Medical College of the State of South Carolina.....																					0	1	55	
56 Meharry Medical.....				1	0					2	0	4	0					2	1		4	0		56
57 University of Tenn.....		2	0		1	0	1	0			5	1	2	0			1	0			1	0		57
58 Vanderbilt Univer.....				1	0					1	0						1	0						58
59 Baylor University College of Medicine.....				1	0					2	0												1	59
60 University of Texas School of Medicine.....																	1	0					2	60
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		

	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50								
Marginal Number	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Examined in	Marginal Number		
1	1	0	2	0									3	0												1	0		53	53	0	0.0	11	1		
2					1	0							1	0	2	0		1	0		2	0			2	0			83	82	1	1.2	14	2		
3																					1	0						41	41	0	0.0	4	3			
4																												51	48	3	5.9	1	4			
5				1	0				1	1					1	0	1	0									2	0		58	57	1	1.7	11	5	
6									5	1		1	0																29	28	1	3.4	11	6		
7							19	0		25	18		1	0		18	0	5	0				4	0					136	111	25	18.4	10	7		
8							5	0		16	3		3	0		2	0		1	0			1	0	1	0		2	64	60	4	6.2	13	8		
9		5	0						5	3		1	0		4	1							5	1		1	0		72	64	8	11.1	13	9		
10	5	0								2	0	1	0						3	0						1	0		64	64	0	0.0	12	10		
11									1	1					0	1	1	0											49	47	2	4.1	6	11		
12			1	0			4	0		3	2		10	0		2	0		1	0						2	0	1	0	116	112	4	3.4	18	12	
13		3	0	1	0		1	0	1	0		7	0	2	0	6	0	5	0	1	0			3	0	1	0	2	0	151	150	1	0.7	31	13	
14		1	0		1	0				7	0	3	0	4	0	4	0							5	0	2	0	2	0	167	162	5	3.0	27	14	
15									1	0																			10	9	1	10.0	3	15		
16		4	0				1	0		3	0		2	0				1	0					3	0	1	0	4	0	133	126	7	5.3	17	16	
17									1	0		1	0												2	0			102	101	1	1.0	11	17		
18		1	0							1	0			1	0														115	115	0	0.0	9	18		
19		6	0						0	2					1	0									1	0			60	58	2	3.3	7	19		
20	3	0	1	0			1	0		6	2			2	0		4	0				1	0			1	0	2	0	90	87	3	3.3	17	20	
21	11	0	1	0					1	0	3	0	1	0				1	0										119	119	0	0.0	15	21		
22							1	0		5	2	2	0										1	0					65	63	2	3.1	13	22		
23							1	0	1	0		24	2	3	0			12	0	1	0					4	0		116	113	3	2.6	13	23		
24						2	0	1	0		11	3			2	0		1	0						1	0		2	0	55	48	7	12.7	11	24	
25				1	0				1	0		10	0	4	0			2	0	5	0				1	0		1	0	73	71	2	2.7	20	25	
26							2	0		11	1				1	0	10	1				1	0			1	0		115	103	12	10.7	12	26		
27										1	0																		61	60	1	1.6	5	27		
28									7	1					3	0	1	0											139	138	1	0.7	10	28		
29		1	0	2	0								5	0	2	0		1	0						6	0		1	0	118	117	1	0.8	14	29	
30		59	0					1	0	1	0	10	4			5	0	1	0										107	101	6	5.6	17	30		
31		64	0						1	0		7	2	2	0			1	0										93	91	2	2.1	14	31		
32				3	0	20	0			2	2			2	0		1	0		2	0								58	54	4	6.0	14	32		
33				43	0					2	1			2	0	1	0		1	0					3	0			73	72	1	1.4	14	33		
34										22	3																		25	23	2	8.7	1	34		
35	1	0							4	0		34	4			2	0										1	0		60	56	4	6.7	16	35	
36					1	0				11	3	8	0		14	0		91	0	3	0								38	36	2	5.3	7	36		
37												66	8			3	0												115	107	8	7.0	5	37		
38												64	9			4	0												81	72	9	11.1	4	38		
39												38	6	3	0														52	44	8	15.4	4	39		
40												47	10	2	0									1	0	2	0		125	115	10	8.0	8	40		
41												40	9																56	47	9	16.1	7	41		
42												10	1			5	0												20	19	1	5.0	6	42		
43																													4	4	0	0.0	1	43		
44																													78	78	0	0.0	5	44		
45																													70	70	0	0.0	7	45		
46																									1	0	1	0		61	61	0	0.0	5	46	
47		1	0												45	0													47	47	0	0.0	3	47		
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P = Passed; F = Failed.

(CONTINUED FROM PAGE 1239)

44.3 per cent of whom failed. There were 47 fewer examined than in 1931; 35 fewer passed but 88 more failed. Fourteen schools had more than 10 per cent of failures.

PHYSICIANS REGISTERED BY RECIPROCITY AND ENDORSEMENT

Table 3 shows that 1,848 physicians were registered by various states and territories in 1932 on the presentation of satisfactory credentials. The physicians so accepted presented licenses from other states, Canada or foreign countries, or the certificate of the National Board of Medical Examiners or one of the government services. In an increasing number of states the boards now accept a physician's credentials, if satisfactory, whether or not the state board issuing the original license returns the favor. The following 29 states and the District of Columbia generally will register, without examination, licentiates who present satisfactory evidence of good moral character and practice record, and, in addition thereto, credentials which correspond to those required by their respective states at the time such licenses were issued:

Alabama	Maine	North Carolina
Arizona	Maryland	Oklahoma
California	Michigan	Oregon
Colorado	Minnesota	Pennsylvania
Connecticut	Missouri	South Carolina
Delaware	Nebraska	South Dakota
District of Columbia	Nevada	Texas
Georgia	New Hampshire	Utah
Idaho	New Jersey	Vermont
Illinois	New Mexico	Wisconsin

California (when ten or more years has intervened), Connecticut, Illinois and Minnesota require a practical or oral examination of reciprocity candidates, before a license is granted by this means.

Florida, Massachusetts and Rhode Island do not have reciprocal or endorsement arrangements with any state.

New York granted the greatest number of licenses by this method in 1932 (256), California was second with 154, New Jersey third with 148 and Ohio fourth with 129. The largest group presenting the same type of credentials were the 325 diplomates of the National Board of Medical Examiners; the next greatest number (127) came from New York, and Illinois was third with 119.

Six candidates were licensed on the basis of Canadian credentials (New Mexico, 1; New York, 4, and Vermont, 1) and 7 were registered by endorsement of foreign degrees or licenses (Germany, 3; Malta, 1; Scotland, 1; Syria, 1, and Turkey, 1). Three physicians were registered by endorsement of licenses issued in Puerto Rico. Eighteen physicians were licensed in New York on presentation of medical diplomas from Austria, 4; Hungary, 8; Italy, 1; Rumania, 1; Russia, 1; Scotland, 1, and Syria, 1, and 1 physician was licensed on the presentation of a diploma from the medical school of the University of Buffalo.

In addition, 23 osteopaths were granted licenses to practice. In California and Texas, 6 and 9, respectively, were granted privileges as physicians and surgeons and 8 in Wisconsin were licensed to practice osteopathy and surgery.

COMPARISON WITH OTHER YEARS

In table 4 are listed the total number of candidates registered in the various states in the past five years, with the numbers examined (passed and failed), and those licensed by reciprocity and endorsement. In the past five years, New York has registered 5,351 candidates, California 2,902, Illinois 2,357, and Pennsylvania 2,299. The percentage of candidates who failed in the examinations in the last five years and the percentage of the total licensed by reciprocity and endorsement are given in the last two columns. The proportion of failures in all the states has increased from 6.6 per cent in

TABLE 3.—Physicians Registered by Reciprocity and Endorsement—1932

[illegible]

OTHER THAN GRADUATES OF APPROVED SCHOOLS
LICENSED 1926-1932

Methods by which graduates of other than approved schools have been licensed during the past seven years are given in table 7. Some interesting developments in the various states may be noted by a study of this table. The total number of such licentiates decreased in 1932 by sixteen, the figure licensed in the previous year.

The osteopathic board of California issues two types of licenses. The certificate issued to a licentiate authorizes him to treat diseases, injuries, deformities or other physical or mental conditions without the use of drugs or medical preparations "and without in any manner severing or penetrating any of the tissues of human beings except the severing of the umbilical cord." If the licentiate obtains a physician's and surgeon's cer-

TABLE 4.—Total Registration—Examination, Reciprocity and Endorsement—1928-1932

	1928			1929			1930			1931			1932			Totals for 5 Yrs.				
	Examined		Reciprocity and Endorsement	Examined		Reciprocity and Endorsement	Examined		Reciprocity and Endorsement	Examined		Reciprocity and Endorsement	Examined		Reciprocity and Endorsement	Examined	Reciprocity and Endorsement	Registered	Percentage Failed in Examination	Percentage Licensed by Reciprocity and Endorsement
	Passed	Failed		Passed	Failed		Passed	Failed		Passed	Failed		Passed	Failed						
Alabama.....	23	0	40	34	1	30	37	1	37	29	21	23	14	0	20	131	148	277	1.5	53.4
Arizona.....	13	2	55	11	1	40	19	0	36	1	1	23	14	2	11	83	157	234	7.2	67.1
Arkansas.....	47	0	18	52	0	26	25	0	21	29	0	18	43	0	10	226	93	319	0.0	29.2
California.....	371	20	223	303	40	263	329	31	243	374	17	196	343	20	160	1,933	1,092	2,902	6.6	37.6
Colorado.....	65	15	40	50	0	40	55	0	40	43	2	23	59	3	23	298	173	451	6.7	38.4
Connecticut.....	67	5	33	63	3	26	51	10	39	66	4	31	63	12	70	354	211	531	9.6	39.7
Delaware.....	10	0	10	11	0	7	7	1	11	12	0	5	6	0	18	47	51	97	2.1	52.6
District of Columbia.....	104	0	18	51	1	13	24	0	24	27	0	9	43	1	17	261	81	340	0.8	23.8
Florida.....	72	3	0	72	3	0	71	8	0	53	5	1	66	6	0	261	1	262	6.0	0.3
Georgia.....	91	0	19	78	0	11	72	0	12	77	0	14	100	0	12	418	68	486	0.0	14.0
Idaho.....	5	1	11	5	2	15	7	0	9	5	0	18	5	0	11	20	64	91	10.0	70.3
Illinois.....	245	30	112	351	22	113	388	33	119	365	24	96	360	23	78	1,981	518	2,337	7.2	22.0
Indiana.....	103	0	42	116	0	42	116	0	37	124	0	43	110	1	24	570	188	737	0.2	14.8
Iowa.....	110	1	34	100	0	35	112	0	45	109	1	66	115	0	43	548	223	769	0.4	29.0
Kansas.....	53	0	26	81	0	32	75	0	34	74	0	41	76	0	43	339	176	535	0.0	32.9
Kentucky.....	77	0	46	65	1	51	76	3	33	64	1	35	68	0	27	355	192	542	1.4	35.4
Louisiana.....	107	1	13	97	0	9	69	1	10	102	1	10	111	3	6	522	48	564	1.1	8.6
Maine.....	29	1	12	24	2	13	22	1	15	30	0	11	30	0	14	139	65	200	2.9	32.5
Maryland.....	116	4	31	106	0	26	120	1	27	133	3	17	176	5	26	684	127	798	1.9	15.9
Massachusetts.....	222	91	31	211	84	41	232	78	44	213	104	41	208	132	55	1,575	212	1,787	31.0	16.3
Michigan.....	253	2	91	266	1	101	302	0	92	260	0	97	219	0	64	1,303	445	1,745	0.2	25.5
Minnesota.....	136	0	47	155	0	39	176	0	26	150	0	20	142	0	20	779	152	931	0.0	10.3
Mississippi.....	24	0	29	27	0	23	31	2	21	25	0	19	27	0	19	146	110	234	1.4	43.3
Missouri.....	105	1	74	116	1	79	149	0	72	157	0	44	156	0	65	635	334	1,017	0.3	32.8
Montana.....	12	1	14	9	0	9	13	0	15	7	0	8	8	0	14	59	53	104	2.0	62.9
Nebraska.....	69	2	8	67	0	0	65	0	7	57	0	17	67	0	8	327	49	374	0.6	13.1
Nevada.....	6	3	10	2	2	15	2	0	15	2	0	27	4	1	11	22	78	84	27.3	83.0
New Hampshire.....	1	0	17	1	0	18	1	0	27	0	0	29	9	0	17	10	108	127	0.0	85.0
New Jersey.....	69	5	181	70	2	220	82	3	185	91	5	159	113	7	148	438	103	1,249	5.0	69.2
New Mexico.....	0	1	18	1	0	23	0	0	21	0	0	37	4	0	15	6	124	129	16.7	93.1
New York.....	835	123	226	900	143	232	810	103	231	838	146	267	717	179	256	4,769	1,251	5,351	14.6	24.4
North Carolina.....	69	4	32	97	8	45	85	5	29	74	0	50	85	1	23	420	159	570	4.2	27.0
North Dakota.....	14	1	10	17	6	3	16	2	6	16	1	7	21	0	6	93	31	115	0.7	27.0
Ohio.....	288	8	111	272	1	121	231	1	112	259	7	125	270	10	129	1,347	599	1,910	2.0	31.2
Oklahoma.....	54	0	29	54	0	45	62	0	45	51	0	29	60	0	22	271	180	451	0.0	39.9
Oregon.....	34	4	32	31	4	38	32	1	33	40	1	24	31	1	21	179	143	316	6.2	46.8
Pennsylvania.....	376	5	51	399	4	43	421	9	42	419	6	51	438	8	59	2,105	296	2,399	1.5	0.8
Rhode Island.....	25	3	3	50	0	2	73	2	7	36	0	7	40	1	0	230	19	243	2.2	7.8
South Carolina.....	46	0	12	29	0	9	37	0	5	47	0	7	40	0	10	197	43	242	0.0	17.8
South Dakota.....	12	0	11	11	0	15	17	0	13	16	0	24	12	0	14	63	77	145	0.0	53.1
Tennessee.....	129	0	22	133	0	19	155	0	19	193	3	26	165	1	13	804	49	850	0.5	11.0
Texas.....	141	5	171	148	0	206	147	0	246	154	2	171	147	0	83	744	877	1,614	0.9	54.0
Utah.....	4	0	10	8	0	23	10	0	7	10	0	16	24	0	5	56	61	117	0.0	62.1
Vermont.....	31	0	4	31	1	11	19	0	8	29	0	5	23	0	15	125	43	167	0.8	25.8
Virginia.....	105	0	30	120	3	33	122	5	28	101	2	35	115	3	25	676	151	714	2.3	21.1
Washington.....	35	1	66	46	1	47	47	2	45	33	0	31	42	0	29	207	218	421	1.9	51.8
West Virginia.....	40	1	26	43	3	31	41	0	27	36	2	24	26	1	28	193	136	322	3.6	42.2
Wisconsin.....	72	1	61	79	6	62	99	0	94	98	11	93	116	3	74	485	389	833	4.3	49.6
Wyoming.....	1	0	11	0	1	15	4	0	9	5	0	18	2	0	8	13	61	73	7.7	83.6
U. S. Territories and Possessions.....	149	23	6	123	21	3	32	4	11	34	2	6	32	4	18	424	44	414	12.7	10.6
Totals.....	5,179	363		5,362	367		5,208	317		5,226	351		5,191	433		23,002	44	414	12.7	10.6
Examined.....	5,547			5,729			5,525			5,577			5,624			23,002				
Reciprocity and Endorsement.....	2,222			2,413			2,265			2,217			1,871			11,033				
Registered.....	7,401			7,775			7,573			7,443			7,092			37,254				
Percentage Failed in Examination.....	6.6			6.4			5.7			6.3			7.7			6.6				
Percentage Licensed by Reciprocity and Endorsement.....	30.0			31.0			31.2			29.8			26.5			29.9				

In table 8 will be noted the total number of graduates of osteopathic colleges and those institutions which since December, 1928, have been classified as unapproved, who were licensed with or without examination in 1932. Ten states licensed 187 graduates of other than approved medical schools. Seventy were graduates of unapproved medical schools and 117 were osteopaths. As will be noted, these 117 osteopaths were registered in California, Colorado, Connecticut, Illinois, Massachusetts, Texas, Washington and Wisconsin. In this connection the following facts are of interest.

His method of practice is not restricted. Fifty-six were granted such certificates during 1932.

In Colorado, osteopaths are admitted to the examination for a license to practice medicine. They have no separate board. The statute of Colorado is silent with respect to the scope of practice authorized by a license issued to an osteopathic applicant. Applicants, apparently, are issued licenses to practice medicine generally.

The Connecticut statute provides that any registered osteopath may practice either medicine or surgery, or both as the case may be, after passing a satisfactory examination before the medical examining board.

The Illinois Department of Registration and Education was delegated by one of the circuit courts to examine an osteopath in certain medical subjects and granted him a license to practice medicine and surgery.

The Massachusetts statute, by definition, includes osteopathy in the practice of medicine but does not differentiate the type of license issued to an osteopathic

The statutes of Texas provide for the issuing of a license to practice medicine only. So far as the statutes indicate, the osteopaths are not restricted in their field of practice. The medical practice act requires that the applicant be a graduate of a reputable school whose entrance requirements and course of instruction are as high as those adopted by the better class of medical

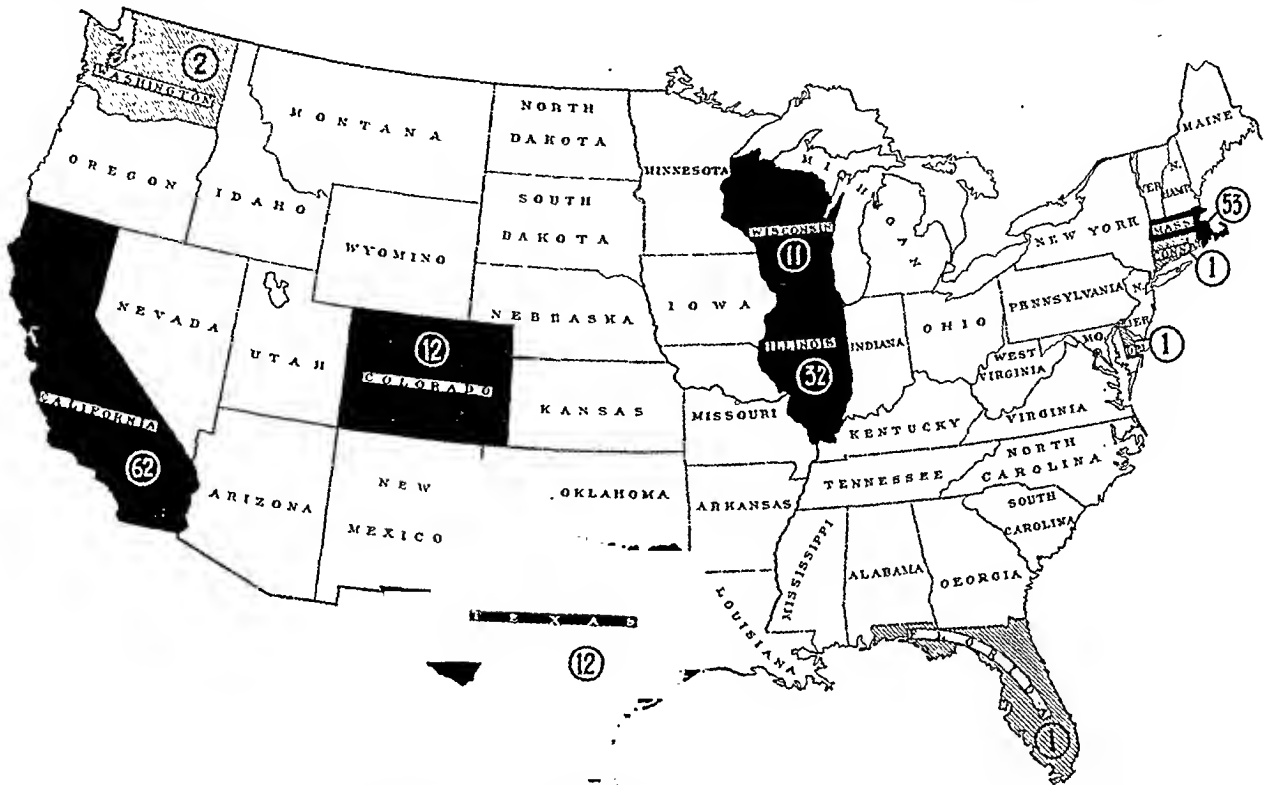


Chart 2.—States licensing other than graduates of approved medical schools during 1932. The states in black licensed more than 10 such candidates. The slanted lines indicate those licensing fewer than 10 graduates.

applicant. The medical practice act requires that any applicant for a license to practice medicine must be in possession of a degree of doctor of medicine, or its

schools and whose course of instruction embraces not less than four terms of eight months each.

Two types of osteopathic licenses are issued in Washington: (1) to practice osteopathy and (2) to practice osteopathy and surgery. Those desiring the privilege of practicing osteopathy and surgery are so

TABLE 5.—Registration by State Boards—1904-1932

Year	All Candidates Examined		Percentage Failed	Registered Without Written Examination		Total Registered
	Examined	Passed		Failed	Examination	
1904.....	7,039	5,076	19.4	999	6,675	6,675
1905.....	7,178	5,088	20.6	394	6,082	6,082
1906.....	8,035	6,368	20.7	1,499	7,867	7,867
1907.....	7,274	5,726	21.3	1,427	7,153	7,153
1908.....	7,773	6,087	21.7	1,280	7,367	7,367
1909.....	7,290	5,860	19.6	1,372	7,232	7,232
1910.....	7,005	5,713	18.4	1,640	7,353	7,353
1911.....	6,963	5,381	19.8	1,243	6,824	6,824
1912.....	6,880	5,467	20.5	1,271	6,738	6,738
1913.....	6,447	5,248	18.6	1,291	6,539	6,539
1914.....	5,573	4,373	21.5	1,437	5,810	5,810
1915.....	5,318	4,491	15.6	1,393	5,864	5,864
1916.....	4,854	4,127	15.0	1,350	5,477	5,477
1917.....	4,741	4,072	14.1	1,359	5,491	5,491
1918.....	3,648	3,160	13.3	1,045	4,205	4,205
1919.....	4,749	4,073	14.2	2,341	6,614	6,614
1920.....	4,793	4,050	15.3	2,553	6,612	6,612
1921.....	4,814	4,218	12.4	2,176	6,394	6,394
1922.....	4,012	3,520	12.3	2,057	5,577	5,577
1923.....	4,712	4,013	14.8	2,396	6,400	6,400
1924.....	5,374	4,738	11.8	1,103	6,641	6,641
1925.....	5,990	5,438	9.2	1,838	7,276	7,276
1926.....	5,819	5,353	8.0	1,928	7,281	7,281
1927.....	5,467	5,080	7.1	2,169	7,249	7,249
1928.....	5,547	5,179	6.6	2,222	7,401	7,401
1929.....	5,729	5,362	6.4	2,433	7,775	7,775
1930.....	5,325	5,208	5.7	2,365	7,573	7,573
1931.....	5,577	5,296	6.3	2,217	7,443	7,443
1932.....	5,624	5,191	7.7	1,871	7,062	7,062

equivalent, from a legally chartered medical school that gives a full four-year course of instruction of not less than thirty-six weeks in each year.

TABLE 6.—Source of Physicians Licensed—1917-1932

Year	Graduates of Approved Schools		Others		Totals
	Number	Per Cent	Number	Per Cent	
1917.....	4,363	80.4	1,066	19.6	5,431
1918.....	3,149	74.9	1,056	25.1	4,205
1919.....	3,258	79.5	1,356	20.5	6,014
1920.....	3,260	79.6	1,352	20.4	6,612
1921.....	3,063	79.2	1,331	20.8	6,394
1922.....	4,505	80.8	1,072	19.2	5,577
1923.....	3,189	81.0	1,220	19.0	6,409
1924.....	5,671	85.4	970	14.6	6,641
1925.....	6,292	86.5	964	13.5	7,276
1926.....	6,418	88.1	863	11.9	7,251
1927.....	6,406	88.4	843	11.6	7,249
1928.....	6,583	88.9	816	11.1	7,401
1929.....	6,695	90.0	780	10.0	7,775
1930.....	7,002	92.5	571	7.5	7,573
1931.....	6,624	93.0	519	7.0	7,443
1932.....	6,626	93.8	436	6.2	7,062

examined by a committee of osteopathic examiners under the jurisdiction of the department of licenses.

In Wisconsin there is one licensing board. A license issued to osteopathic candidates authorizes them to practice osteopathy and surgery.

The sixty-nine graduates of unapproved schools were licensed in four states. Delaware and Florida each

licensed one. In the Florida case the applicant had taken postgraduate work. Illinois recognizes a low grade school which is not in good standing with other state boards. The Massachusetts law has already been described.

These data are illustrated in chart 2. Those states which licensed more than ten such individuals are indicated in black, those licensing fewer than ten by slanted lines.

California, Connecticut, Massachusetts, Washington and Wisconsin have laws which, in the interest of

TABLE 7.—Other Than Graduates of Approved Schools Licensed—1926-1932

	1926	1927	1928	1929	1930	1931	1932	Totals
	Examination Reciprocity and Endorsement	Examination Reciprocity and Endorsement	Examination Reciprocity and Endorsement	Examination Reciprocity and Endorsement	Examination Reciprocity and Endorsement	Examination Reciprocity and Endorsement	Examination Reciprocity and Endorsement	
Alabama.....	0	0	0	0	0	0	0	1
Arizona.....	0	0	1	0	0	0	0	1
Arkansas.....	0	1	2	0	0	0	0	3
California.....	47	2	68	8	97	29	54	4
Colorado.....	44	1	38	4	23	3	10	1
Connecticut.....	0	0	2	0	0	1	0	3
Delaware.....	0	0	0	0	0	0	0	0
Dist. Columbia.....	1	2	0	0	1	3	0	6
Florida.....	3	0	1	0	1	0	1	6
Georgia.....	0	1	1	0	0	2	0	4
Idaho.....	0	0	1	0	0	0	0	1
Illinois.....	40	0	40	0	30	2	35	0
Indiana.....	0	0	0	0	0	0	0	0
Iowa.....	0	0	0	0	0	0	0	0
Kansas.....	1	0	0	1	3	0	2	7
Kentucky.....	3	0	0	0	0	0	0	3
Louisiana.....	0	0	0	0	0	0	0	0
Maine.....	0	0	0	0	0	0	0	0
Maryland.....	0	2	0	0	0	0	0	2
Massachusetts.....	55	0	29	0	58	0	52	0
Michigan.....	1	2	0	0	1	0	3	7
Minnesota.....	0	0	0	0	0	0	0	0
Mississippi.....	2	0	1	0	1	0	0	4
Missouri.....	0	0	1	1	0	2	0	4
Montana.....	0	0	0	0	0	0	0	0
Nebraska.....	1	1	0	1	0	0	0	3
Nevada.....	0	1	1	2	1	2	0	7
New Hampshire.....	0	0	0	1	0	0	0	1
New Jersey.....	0	0	0	1	0	1	0	2
New Mexico.....	0	1	0	1	0	0	0	2
New York.....	0	0	1	1	1	0	2	5
North Carolina.....	0	1	0	0	2	1	1	5
North Dakota.....	0	0	0	0	0	0	0	0
Ohio.....	0	0	0	0	1	0	0	1
Oklahoma.....	0	0	0	2	0	1	0	3
Oregon.....	1	0	0	0	1	0	1	3
Pennsylvania.....	3	1	1	0	0	1	0	6
Rhode Island.....	0	0	0	0	0	0	0	0
South Carolina.....	0	0	0	1	0	0	0	1
South Dakota.....	0	2	0	0	0	0	0	2
Tennessee.....	0	1	0	0	1	0	0	2
Texas.....	4	30	6	19	1	34	10	10
Utah.....	0	0	0	0	0	0	0	0
Vermont.....	0	0	0	0	0	0	0	0
Virginia.....	0	1	0	2	0	0	0	3
Washington.....	0	0	1	0	0	0	0	1
West Virginia.....	0	0	4	0	0	0	1	5
Wisconsin.....	0	1	0	1	0	0	0	2
Wyoming.....	0	0	0	0	0	0	0	0
U. S. Terr. and Possessions.....	0	0	3	0	1	0	0	4
Totals.....	215	52	231	47	232	62	245	71
	267	278	274	316	271	216	200	1,842

Table 9 presents the figures for the past year, and for the preceding five years, for each of those universities having five or more examined in 1932. It is interesting to note that Edinburgh had as many of its graduates examined in this country last year as in the preceding five years and that the failures have increased from 0 to 15 per cent.

Because of the recent migration of large numbers of American students to European universities it has seemed desirable to study the performance of the graduates of these schools before our state boards of medical examiners. This record is given in table 10.

These students do not enjoy equal privileges with the natives of those countries in which they are studying,

TABLE 8.—Licenses to Practice Medicine and/or Surgery Issued to Other Than Graduates of Approved Medical Schools—1932

States	Graduates of				Totals
	Osteopathic Schools		Unapproved Medical Schools		
	Examination	Reciprocity and Endorsement	Examination	Reciprocity and Endorsement	
California.....	56	6	0	0	62
Colorado.....	12	0	0	0	12
Connecticut.....	1	0	0	0	1
Delaware.....	0	0	0	1	1
Florida.....	0	0	1	0	1
Illinois.....	1	0	31	0	32
Massachusetts.....	16	0	37	0	53
Nebraska.....	3	0	0	0	3
Texas.....	2	0	0	0	2
Totals.....	94	23	69	1	187

so that their anticipated return to the United States after graduation constitutes a serious problem for our licensing boards and for the medical profession. On the initiative of the Council, a number of informal

TABLE 9.—Foreign Medical Graduates

	1927-1931 Inclusive		1932	
	Number Examined	Percentage Failed	Number Examined	Percentage Failed
Universität Wien.....	65	33.8	12	25.0
Deutsche Universität, Prague.....	16	31.3	6	66.7
Université de Paris.....	21	33.3	8	37.5
Regia Università di Napoli.....	176	76.7	26	57.8
Regia Università di Palermo.....	34	73.5	9	88.9
Regia Università di Roma.....	42	57.1	13	69.2
University of Edinburgh.....	20	0.0	20	15.0

conferences were held, participated in by the Association of American Medical Colleges, the National Board of Medical Examiners, the New York State Board of Regents, the Federation of State Medical Boards of the United States and this Council, resulting in the adoption by the Federation of the following resolution:

1. That no American student matriculating in a European medical school subsequent to the academic year 1932-1933 will be admitted to any state medical licensing examination, who does not, before beginning such medical study, secure from a state board of medical examiners, or other competent state authority, a certificate endorsed by the Association of American Medical Colleges or the Council on Medical Education and Hospitals of the American Medical Association showing that he has met the premedical educational requirements prescribed by the aforementioned authorities.

public policy, should be amended. In Colorado, Illinois and Texas the state board of medical examiners is vested with discretionary power which could be more vigilantly exercised.

STUDENTS FROM FOREIGN MEDICAL FACULTIES

In THE JOURNAL, Aug. 27, 1932, were published figures showing the standing during the five-year period 1927-1931 of the graduates of each of the faculties of medicine outside the United States and Canada from which five or more graduates had been admitted to the licensing examinations in this country. A similar tabulation for all candidates has been made of the results for 1932.

TABLE 10.—Graduates of Medical Faculties of Universities in Countries Other Than the United States and Canada—1932

Marginal Number	NAME OF COLLEGE	Alabama	California	Connecticut	Dist. Columbia	Florida	Illinois	Indiana	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	New Jersey	New Mexico	New York	Ohio	Pennsylvania	Rhode Island	Texas	Vermont	West Virginia	Wisconsin	U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Examined in	Marginal Number
1	AUSTRIA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	4	1	3	75.0	2	1
2	Karl-Franzens-Universität, Graz	0	1														1	2									4	1	3	75.0	2	1
3	Leopold-Franzens-Universität, Innsbruck																	0	1								1	0	1	100.0	1	2
4	Universität Wien	2	1														0	2					1			12	9	3	25.0	3	2	
5	BELGIUM																										2	1	1	50.0	1	4
6	Université Catholique de Louvain																	1	1								2	1	1	50.0	1	4
7	CHINA																										1	1	0	0.0	1	5
8	Pennsylvania Medical School, Shanghai																									1	1	0	0.0	1	5	
9	COLOMBIA																										1	1	0	0.0	1	5
10	Universidad de Cartagena																1	0									1	1	0	0.0	1	0
11	CUBA																										1	1	0	0.0	1	0
12	Universidad de la Habana																										4	3	1	25.0	3	7
13	CZECHOSLOVAKIA																										0	2	4	66.7	3	8
14	Deutsche Universität, Prague																	0	3		1	0					2	1	1	50.0	2	6
15	Karlov University, Prague																1	0									2	1	1	50.0	1	10
16	Masarykov University, Brno																	0	1								1	0	1	100.0	1	10
17	DOMINICAN REPUBLIC																										3	2	1	33.3	2	11
18	Universidad de Santo Domingo																										3	2	1	33.3	2	11
19	ENGLAND																										2	2	0	0.0	1	12
20	King's College Hospital Medical School, London																										2	2	0	0.0	1	12
21	Liechtenstein of the Royal Coll. of Physicians, London, and Member of the Royal Coll. of Surgeons, England																										2	2	0	0.0	2	13
22	Middlesex Hospital Medical School, London																										1	1	0	0.0	1	14
23	University of London																										1	0	1	100.0	1	15
24	FRANCE																										1	1	0	0.0	1	10
25	Université de Bordeaux																										1	1	0	0.0	1	10
26	Université de Lyon																										1	1	0	0.0	1	10
27	Université de Paris																										8	5	3	37.5	5	19
28	GERMANY																										2	1	1	50.0	2	10
29	Albert-Ludwigs-Universität, Freiburg																										2	1	1	50.0	2	10
30	Friedrich-Alexanders-Universität, Erlangen																										1	0	1	100.0	1	20
31	Julius-Maximilians-Universität, Würzburg																										1	0	1	100.0	1	21
32	Ludwig-Maximilians-Universität, München																										1	0	0	0.0	1	22
33	Friedrich-Wilhelms-Universität, Berlin																										2	0	2	100.0	1	23
34	Thüringische Landesuniversität, Jena																										4	2	1	25.0	2	24
35	Universität Leipzig																										2	1	1	50.0	1	25
36	GRECE																										2	1	1	50.0	1	25
37	National University of Athens																										1	0	1	100.0	1	26
38	HUNGARY																										2	0	2	100.0	2	27
39	Magyar Királyi Erzsébet Tudományegyetem, Pécs																										2	0	2	100.0	2	27
40	Magyar Királyi Ferencz József Tudományegyetem, Szeged																										3	3	0	0.0	2	29
41	Magyar Királyi Pázmány Petrus Tudományegyetem, Budapest																										3	3	0	0.0	2	29
42	IRELAND																										3	3	0	0.0	2	29
43	Queen's University, Belfast																										3	2	1	33.3	2	30
44	ITALY																										3	2	1	33.3	2	30
45	Regia Università di Bologna																										1	0	1	100.0	1	31
46	Regia Università di Catania																										1	1	0	0.0	1	32
47	Regia Università di Firenze																										4	3	1	25.0	2	33
48	Regia Università di Genova																										3	1	2	66.7	1	34
49	Regia Università di Napoli																										26	11	15	57.7	9	35
50	Regia Università di Palermo																										9	1	8	88.9	3	36
51	Regia Università di Pavia																										1	0	1	100.0	1	37
52	Regia Università di Roma																										13	4	9	69.2	4	38
53	MEXICO																										1	1	0	0.0	1	39
54	Escuela Médico Militar, Mexico, D.F.																										1	1	0	0.0	1	39
55	Universidad Nacional de Guadaluajara																										1	1	0	0.0	1	40
56	Universidad Nacional, Mexico, D.F.																										1	1	0	0.0	1	41
57	NORWAY																										1	1	0	0.0	1	41
58	Kongelige Frederiks Universitet, Oslo																										1	1	0	0.0	1	42
59	PHILIPPINE ISLANDS																										2	1	1	50.0	2	43
60	University of Santo Tomas, Manila																										2	1	1	50.0	2	43

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
POLAND.....																									
41 Uniwersytetu Jana Kazimierza, Lwów.....																									
PORTUGAL.....																									
45 Faculdade de Medicina de Lisbon.....	1	0																							
RUMANIA.....																									
Universitatea din Bucuresti.....	1	1																							
46 Universitatea Regele Ferdinand I-in din Cluj.....																									
SCOTLAND.....																									
43 Licentiate of the Royal College of Physicians, the Royal College of Surgeons, Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow.....																									
49 Licentiate of the Royal College of Surgeons, Edinburgh.....																									
50 University of Aberdeen.....																									
51 University of Edinburgh.....																									
52 University of St. Andrews.....																									
SWITZERLAND.....																									
53 Universität Bern.....																									
54 Universität Zurich.....																									
UNION OF SOCIALIST SOVIET REPUBLICS.....																									
55 Moscow State University.....	1	1																							
56 Psycho-Neurological Institute, Petrograd.....	0	1																							
57 University of Saratov.....	0	1																							
58 University of Tomsk.....	1	16	1	2	1	0	1	1	1	9	5	2	1	12	1	20	5	2	1	4	2	2	2	3	181
Totals by states.....	1	8	0	2	1	6	3	1	0	1	0	3	2	1	5	1	43	0	2	1	4	2	1	1	2
Total—Examined—Passed.....	0	8	1	0	0	3	0	0	1	0	3	2	0	0	7	0	53	5	0	0	0	0	1	1	...
Total—Examined—Failed.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	...
Percentage of Failures.....	0.0	50.0	100.0	0.0	0.0	33.3	0.0	0.0	100.0	0.0	33.3	40.0	0.0	0.0	58.3	0.0	55.2	100.0	0.0	0.0	0.0	50.0	50.0	33.3	...
Percentage of Failures.....	1	2	3	4	5	0	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

T = True; F = False.

2. That no student, either American or European, matriculating in a European medical school subsequent to the academic year 1932-1933 will be admitted to any state medical licensing examination, who does not present satisfactory evidence of premedical education equivalent to the requirements of the Association of American Medical Colleges, and the Council on Medical Education and Hospitals of the American Medical Association, and graduation from a European medical school after a medical course of at least four academic years, and submit evidence of having satisfactorily passed the examination to obtain a license to practice medicine in the country in which the medical school from which he is graduated is located.

These requirements have also been endorsed by the individual state medical boards.

STATE REQUIREMENTS OF PRELIMINARY EDUCATION

There are now forty-three states, the District of Columbia, Alaska and Puerto Rico which, by law, by board ruling, or by both, have adopted requirements of preliminary education in addition to a standard four-year high school education.

Of these, forty-two require the two-year standard. Two territories have no definite requirement of preliminary education, while five states still require only a high school education. Sixteen states, the District of Columbia and Alaska now require the completion of a year's internship in a hospital before the candidate is qualified to take the professional examination. The number of college years required and the time the higher requirements became or become effective are as follows:

State Examining Board of	One Year of College Work. Affects Grad- uates of	Two Years of College Work. Affects Grad- uates of	A Hospital Internship Affects All Applicants
Alabama.....	1918	1919	.....
Arizona.....	1918	1922	.....
Arkansas.....	1918	1922	.....
California.....	1924	.....	.....
Colorado.....	1912	1914	.....
Connecticut.....	1919	.....	.....
Delaware.....	.....	.....	1924
District of Columbia.....	.....	1929	1930
Florida.....	1918	1922	.....
Georgia.....	.....	1922	.....
Idaho.....	1933	1938	.....
Illinois.....	1919	1923	1923
Indiana.....	1914	1915	.....
Iowa.....	.....	1915	1924
Kansas.....	1914	1922	.....
Kentucky.....	1918	1922	.....
Louisiana.....	1919	1922	.....
Maloc.....	1910	1920	.....
Maryland.....	1918	1922	.....
Massachusetts.....	.....	.....	.....
Michigan.....	1918	1922	1922
Minnesota.....	.....	1912	.....
Mississippi.....	1910	.....	.....
Missouri.....	.....	.....	.....
Montana.....	1918	1922	.....
Nebraska.....	.....	.....	.....
Nevada.....	1918	1922	.....
New Hampshire.....	.....	1919	.....
New Jersey.....	1920	1921	.....
New Mexico.....	1918	.....	1916
New York.....	.....	1922	.....
North Carolina.....	1918	1922	.....
North Dakota.....	.....	1912	1918
Ohio.....	.....	.....	.....
Oklahoma.....	1918	1921	1923
Oregon.....	.....	1924	1923
Pennsylvania.....	1918	.....	1914
Rhode Island.....	1918	1922	1917
South Carolina.....	1915	1922	.....
South Dakota.....	1912	1915	.....
Tennessee.....	1920	1922	1925
Texas.....	1918	1930	.....
Utah.....	1917	1926	1926
Vermont.....	1917	1922	.....
Virginia.....	1918	1922	.....
Washington.....	1918	1922	1919
West Virginia.....	1921	1925	1922
Wisconsin.....	.....	1919	1927
Wyoming.....	.....	1922	1921
Alaska.....	1918	1922	.....
Canal Zone.....	.....	.....	1917
Hawaii.....	.....	.....	.....
Puerto Rico.....	.....	1922	.....

* Requires a four-year high school education or its equivalent.
† No fixed standard.

BASIC SCIENCE BOARDS

STATISTICS FOR 1932

Basic science boards have been established and are in operation in six states; namely, Arkansas, Connecticut, Minnesota, Nebraska, Washington, Wisconsin and the District of Columbia. Legislation creating basic science boards in Arizona and Oregon has recently been passed. The greatest degree of usefulness for these boards exists in those states which have multiple examining boards. The object of these boards has been to provide a means of insuring that all candidates seeking authority to care for sick and injured people shall first possess a reasonable knowledge of the sciences fundamental to the healing art as demonstrated by an examination in those subjects before they can enter the professional examination. The subjects in which examinations are conducted are listed in table 1. They include anatomy, pathology and physiology by all boards, chemistry by five boards, bacteriology and hygiene by four boards, and diagnosis by two.

TABLE 1.—Subjects of Examinations

State	Examinations Required in							
	Anat- omy	Bacteri- ology	Chem- istry	Diag- nosis	Hy- giene	Pathol- ogy	Physi- ology	
Arkansas.....	+	+	+	+	..	+	+	
Connecticut.....	+	+	+	+	..	+	+	
District of Columbia..	+	+	+	+	..	+	+	
Minnesota.....	+	+	+	+	..	+	+	
Nebraska.....	+	+	+	+	..	+	+	
Washington.....	+	..	+	+	..	+	+	
Wisconsin.....	+	+	..	+	+	

Altogether, 735 candidates were examined by the seven boards in 1932, of whom 634 passed and 101, or 13.7 per cent, failed. As indicated in table 2, of this number 657 were physicians or medical students, of whom 590 passed and 67, 10.2 per cent, failed. There were 45 osteopaths, of whom 33 passed and 12, 26.7 per cent, failed. There were also 23 chiropractors, of whom 5 passed and 18, or 78.3 per cent, failed. Minnesota examined 150, the largest number, and also had the highest number of failures. Of osteopaths, Connecticut examined the highest number and Wisconsin examined 10.

TABLE 2.—Applicants Examined—1932

State	Year Ex- amined	Physi- cians or Medical Students		Osteo- paths		Chiro- practi- cians		Unclas- sified		Total Ex- amined	Passed	Failed	Percentage Failed
		P	F	P	F	P	F	P	F				
Arkansas.....	1929	51	1	0	0	0	0	2	0	54	53	1	1.9
Connecticut.....	1925	118	1	17	4	0	4	0	0	145	135	10	6.9
Dist. of Columbia..	1929	39	6	0	0	0	0	0	0	45	39	6	13.3
Minnesota.....	1927	104	28	5	6	1	5	1	0	150	111	39	26.0
Nebraska.....	1927	86	21	1	1	0	0	1	2	112	88	24	21.4
Washington.....	1927	68	4	0	1	3	7	0	1	84	71	13	15.5
Wisconsin.....	1925	124	6	10	0	1	2	2	0	145	137	8	5.5
Totals—Examined.....		657		45		23		10		735			
Totals—Passed.....		590		33		5		6		634			
Totals—Failed.....		67		12		18		4		101			
Percentage Failed.....		10.2		26.7		78.3		40.0					13.7

The number of certificates granted by examination and reciprocity and endorsement are listed in table 3. Wisconsin accepted the greatest number from other states, 72, of whom 62 were physicians and 10 osteopaths. All boards except that of Washington have established reciprocal relations. The basic science board of Wisconsin issues reciprocity certificates to medical and osteopathic reciprocity candidates from states without basic science legislation on verification from the medical board that the applicant's credentials have been

accepted, which accounts for the large number licensed by endorsement.

Table 4 shows the number of candidates examined and certified from 1927 to 1932. In 1932, 10.2 per cent of physicians failed, as compared with 43.6 per cent for other practitioners.

In 1928, when five boards were functioning, there were 646 physicians examined, of whom 60, or 9.3 per

TABLE 3.—Certificates Issued by Examination, Reciprocity and Endorsement—1932

State	Examination					Reciprocity and Endorsement					Registered
	Physicians or Med. Students	Osteopaths	Chiropractors	Unclassified	Totals	Physicians	Osteopaths	Chiropractors	Unclassified	Totals	
Arkansas.....	51	0	0	0	53	0	0	0	0	0	53
Connecticut.....	118	17	0	0	135	0	0	0	0	0	135
District of Columbia.....	39	0	0	0	39	0	0	0	0	0	39
Minnesota.....	104	5	1	1	111	26	1	0	0	27	138
Nebraska.....	86	1	0	1	88	8	0	0	0	8	96
Washington.....	68	0	3	0	71	0	0	0	0	0	71
Wisconsin.....	124	10	1	2	137	62	10	0	0	72	209
Totals.....	550	33	5	6	634	96	11	0	0	107	741

cent, failed, and 59 nonmedical practitioners, of whom 28, 47.5 per cent, failed. In 1932, with seven boards functioning, 657 physicians and 78 other practitioners were examined, of whom 10.2 and 43.6 per cent, respectively, failed. During the six-year period a total of 3,641 physicians were examined, of whom 10.5 per cent failed and 410 other practitioners, of whom 51.5 per cent failed. During this period 450 physicians were certified without examination, while only 16 nonmedical practitioners were granted this privilege. Altogether,

TABLE 4.—Total Candidates—1927-1932

Year	No. of Boards	Physicians						Other Practitioners					
		Examination					Total Certified	Examination					Total Certified
		Examined	Passed	Failed	Percentage Failed	Endorsement		Examined	Passed	Failed	Percentage Failed	Endorsement	
1927.....	5	305	279	26	8.5	26	305	22	15	7	31.8	1	16
1928.....	5	646	596	60	9.3	19	605	59	31	28	47.5	0	31
1929.....	5	668	610	58	8.7	75	685	66	31	35	53.0	0	31
1930.....	5	685	606	79	11.5	104	710	78	30	48	61.5	4	34
1931.....	5	680	586	94	13.8	130	716	107	48	59	55.1	0	48
1932.....	7	657	590	67	10.2	96	686	78	44	34	43.6	11	59
Totals.....		3,641	3,257	384	10.5	450	3,707	410	199	211	51.5	16	215

3,707 physicians and 215 others were certified. From the high percentage of failures in the nonmedical group, it seems apparent that the enforcement of basic science laws affects most seriously this group.

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners was organized in 1915. Its certificate is recognized by the licensing boards of the following forty-two states and three territories:

Alabama	Kansas	New Hampshire	Rhode Island
Arizona	Kentucky	New Jersey	South Carolina
California	Maine	New Mexico	South Dakota
Canal Zone	Maryland	New York	Tennessee
Colorado	Massachusetts	North Carolina	Utah
Connecticut	Minnesota	North Dakota	Vermont
Delaware	Mississippi	Ohio	Virginia
Georgia	Missouri	Oklahoma	Washington
Hawaii	Montana	Oregon	West Virginia
Idaho	Nebraska	Pennsylvania	Wisconsin
Illinois	Nevada	Puerto Rico	Wyoming
Iowa			

Candidates for licensure in Connecticut, Illinois, Maine, Montana, Rhode Island and Wyoming are given an oral examination by the state board. In the case of Montana, Nebraska and Ohio the answer papers written by the applicant in his National Board examination are forwarded under seal to the state board for review and approval. The Maryland and North Carolina boards ask all applicants, whether diplomates of the National Board or otherwise, to present themselves for a personal interview. Applicants for registration in Pennsylvania must have had a rotating internship in accordance with the regulations adopted for all applicants seeking licensure in that state. Several boards, including New York, Pennsylvania and South Carolina, reserve the privilege of reviewing each candidate's credentials. California requires a year of residence in some state after a candidate becomes a diplomate. The examinations of the National Board are also accepted by the basic science boards of Connecticut, Minnesota, Nebraska, Wisconsin and the District of Columbia.

The certificate of the National Board is accepted by the United States Army as a scientific qualification for entrance to the medical corps. It is also accepted in part by the United States Public Health Service. Its diplomates are admitted to the final examinations given by the examining boards of England, Ireland, Scotland and Spain.

Since 1922 the board has conducted its examinations in three parts, as follows: Part I, a written examination in anatomy, including histology and embryology; physiology; physiologic chemistry; pathology; bacteriology, including immunology; pharmacology, and materia medica. Part II, a written examination in medicine, including pediatrics, neuropsychiatry and therapeutics; surgery, including applied anatomy, surgical pathology and surgical specialties; obstetrics and gynecology; public health, including hygiene and medical jurisprudence. Part III, a clinical and practical examination in (a) clinical medicine, including medical pathology, medical anatomy, applied physiology, applied pharmacology, clinical chemistry, clinical microscopy and dermatology; (b) clinical surgery, including applied anatomy, surgical pathology, operative surgery and the surgical specialties of the diseases of the eye, ear, nose and throat; (c) obstetrics and gynecology; (d) public health, including sanitary bacteriology and the communicable diseases.

Four examinations were held in parts I and II during 1932, of whom 1,307 and 732, respectively, were examined, of whom 847 passed part I and 89, or 9.5 per cent, failed. In part II, 674 passed and 58, or 7.9 per cent, failed. In part I, 371 took an incomplete examination.

The results of the examinations in part III, which were held in several of twenty subsidiary centers in different parts of the country, since 1922 are presented in the following tabulation. In 1932, 549 were examined, as compared with 437 in 1931. Of those examined in part III in 1932, 5.1 per cent failed, while in 1931, 4.1 per cent failed. During the eleven year period 3,069 candidates were examined, of whom 2,919 were granted certificates and 149, or 4.9 per cent, failed.

In computing percentages in this table, the figures given in the column "Incomplete" were not included. An incomplete examination is arranged for candidates taking part I at the end of their second medical year in schools whose third-year curriculums include courses

in one or two subjects of this part. The subjects thus postponed may be taken at any examination period after the candidate has completed them in his medical school. Also listed under "Incomplete" are those who wish to spend some additional time on one or two subjects. Final credit is not determined until the candidates have taken the remaining subjects.

Examinations in Part III

Examinations of	Total Examined	Passed	Incomplete	Failed	Percentage Failed
1922.....	28	28	0	0	0.0
1923.....	76	75	0	1	1.3
1924.....	120	114	0	6	5.0
1925.....	217	206	0	11	5.1
1926.....	255	243	0	12	4.7
1927.....	294	272	0	22	7.5
1928.....	322	306	0	16	5.0
1929.....	352	336	1	15	4.3
1930.....	419	399	0	20	4.8
1931.....	437	419	0	18	4.1
1932.....	549	521	0	28	5.1
Totals.....	3,069	2,919	1	149	4.9

The figures in the following table represent the number of individuals examined during any one year. The classification as passed or failed, in cases in which more than one examination had been taken in a given year, was based on the results of the last examination taken during the year in question. For example, if in 1932 a student passed part I but failed in part II, he is listed as having failed in 1932. Taking this into consideration, there were 2,341 individuals who took the National Board examinations during 1932, as compared with 2,218 in 1931. Only 525 were examined in 1922. The percentage of failures in 1932 was 6.9.

During the ten year period, altogether 15,609 individuals were examined, of whom 11,931 passed and 1,558, or 11.6 per cent, failed.

Diplomates licensed without further examination in the United States increased from 2 in 1917 to 325 in 1932, 1,799 having been so licensed since the board was created.

Parts I, II and III, Excluding Duplications

	Total Examined	Passed	Incomplete	Failed	Percentage Failed
1922.....	525	381	58	86	18.4
1923.....	775	594	79	102	14.7
1924.....	978	756	69	153	16.8
1925.....	1,167	915	50	202	18.1
1926.....	1,301	950	105	246	11.9
1927.....	1,248	947	142	159	14.4
1928.....	1,439	1,101	211	128	9.7
1929.....	1,723	1,280	319	124	8.8
1930.....	2,043	1,546	322	175	10.2
1931.....	2,341	1,632	410	176	9.7
1932.....	2,341	1,640	355	127	6.9
Totals.....	15,609	11,931	2,120	1,558	11.6

As a result of the steadily increasing number of applicants for admission to medical schools abroad, and in cooperation with other agencies interested in this problem, the National Board in February of this year passed the following resolution:

That no student, either American or European, matriculating in a European medical school subsequent to the academic year 1932-1933 will be admitted to the examination of the National Board of Medical Examiners who does not present satisfactory evidence of premedical education equivalent to the requirements of the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association, and graduate from a European medical school after a medical course of at least four academic years, and obtain a license to practice medicine in the country in which the medical school from which he graduated is located.

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SATURDAY, APRIL 22, 1933

VITAMIN C

In a recent contribution to the current literature on vitamins, Hassan and Basili¹ have shown that, contrary to accepted views, the juice of fresh Egyptian limes is as potent a source of the antiscorbutic factor as is the juice of lemons or oranges. This observation recalls the fact that lime juice was early regarded as an effective prophylactic and cure for scurvy. Indeed, in 1795, every vessel in the British navy was required to carry a supply of lime juice as a protection against this disease, which broke out regularly among the sailors on long sea voyages. However, after the advent of the vitamin hypothesis, when widespread assays for the antiscorbutic factor were carried out on natural food materials, it was observed that lime juice was definitely inferior to other citrus fruits in this respect. This is now explained by the observation of the Cairo investigators that the loss of vitamin C occurs in lime juice at a much faster rate than in lemon juice. In the older studies imported limes were used and the juice was kept for feeding purposes over a period of two months or more, thus permitting the destruction of the antiscorbutic factor.

The foregoing observations call attention to the rapid advance in knowledge of the chemical nature of vitamin C that has taken place within the last two years. From concentrated lemon juice, crystalline material has been obtained which exerts a powerful antiscorbutic action in experimental animals. In one laboratory, equally potent crystals have been prepared from the cortex of the suprarenal glands. Chemical examination of these active crystalline preparations indicates that they are identical compounds with an empirical formula of $C_6H_8O_6$. According to Karrer and his co-workers,² this effective material is an organic acid with two ketone groups, easily susceptible to oxidation, and shows an absorption band at 265 millimicrons when dissolved in water. This substance, now called

ascorbic acid, showed no loss in antiscorbutic activity after being recrystallized as many as five times. It is significant, furthermore, that those natural sources of vitamin C which have been analyzed show the presence of ascorbic acid.

Although the ascorbic acid from widely different sources appears to be identical chemically, and in spite of the fact that from 0.5 to 1.0 mg. daily will protect an experimental animal from scurvy, there has been some hesitation in identifying it with vitamin C. In an effort to obtain evidence on this point, Harris and Ray³ have assayed the cortical tissue of bovine suprarenal glands for vitamin C and compared the results with those obtained with orange juice, at the same time comparing the two materials on the basis of content of ascorbic acid. The fresh cortex of the suprarenals has proved to be the most potent source of the antiscorbutic factor thus far investigated, being three times more potent than orange juice, long recognized as rich in this factor. As the comparison on the basis of the bio-assay corresponds to the relative amounts of ascorbic acid determined in these sources and isolated from them, it appears that vitamin C is identical with ascorbic acid or is a substance closely similar to it in distribution and in chemical nature.

The current investigations on vitamin C have a two-fold interest: they have progressed to the point at which chemical identification of this dietary essential is imminent, thus satisfying one of the goals of biochemical research. The studies also have served to stimulate an interest in the physiologic chemistry of the suprarenal cortex. The concentration of ascorbic acid in this organ in scorbutic animals is diminished and at the same time there occurs a definite hypertrophy of the gland, apparently a compensatory reaction. It appears that the chemical studies of vitamin C will soon reach the point at which the localization of this food factor in the suprarenal gland and the mechanism of its protection against scurvy can be explained.

INSULIN AND ACUTE INFECTIONS

Students of diabetes are familiar with the fact that the onset of diabetic glycosuria often follows a history of acute infection in the patient. The bibliography of the subject is far too extensive to be reviewed here. A few typical quotations will serve to stress the salient features. For example, Geyelin¹ stated that he had seen eight cases in which the diabetes arose within five weeks after an acute infection. White,² in her study of a hundred diabetic children, found that only 2 per cent did not have a history of acute infections preceding the onset of the diabetes. It seems to be well accepted that diabetes, even in a fulminating

3. Harris, L. J., and Ray, S. N.: *Biochem. J.* **26**: 2067, 1932.

1. Geyelin, H. R., in Cecil, R. L.: *Text Book of Medicine*, ed. 2, Philadelphia, W. B. Saunders Company, 1930.

2. White, Priscilla: *The Potential Diabetic Child*, J. A. M. A. **88**: 170 (Jan. 15) 1927.

1. Hassan, A., and Basili, R.: *Biochem. J.* **26**: 1846, 1932.

2. Karrer, P.; Salomon, H.; Schöpf, K., and Morf, R.: *Biochem. Ztschr.* **258**: 4, 1933.

form, can follow acute infectious diseases such as typhoid, scarlet fever, cholera, influenza, diphtheria, tonsillitis, malaria, syphilis and rheumatic fever.

A new significance to such observations has been given by the recent researches of Williams and Dick³ at the John McCormick Institute for Infectious Diseases, Chicago. They found that a temporary glycosuria occurs in acute infections and contagious diseases as well as in experimental infections; nearly half of the patients with acute infectious diseases had glycosuria when given sufficient dextrose. Likewise, in experimental infections in animals a similar transient glycosuria has been produced. This is accompanied by an increase in the height of the blood sugar concentration during fasting, and by alterations in the blood sugar curves as shown by the dextrose tolerance tests in animals. Feeding experiments in human patients suffering from acute infections demonstrated a true lowered carbohydrate dextrose tolerance. It may last several months.

A feature of this study is the demonstration that under the conditions outlined the sugar tolerance may be greatly improved by the administration of insulin. This suggests that the toxemia of the infections interferes with the action or the production of insulin or with both these factors. By supplying exogenous insulin, which restores the carbohydrate tolerance, it would appear that lack of production is probable. According to the Chicago investigators, the action of insulin in improving the carbohydrate tolerance in acute infections is analogous to its similar action in diabetes mellitus. In many instances the severity of the disease and the degree of reduction of tolerance could be correlated, and in patients having one contagious disease following another there was marked reduction of tolerance. This suggests, they add, a probable important factor in the etiology of diabetes. The recovery of tolerance following injury by infection is explained by Williams and Dick as immunity to the infecting organism and by regeneration of the islets of Langerhans. It has been demonstrated that the latter fact occurs in diabetes in which tolerance has been improved. Much thinking in this field will be clarified by the suggestion that in infectious diseases there is often an injury to the islets of Langerhans with a lessened production of insulin.

In contrast with the effects of shortage of insulin, it may be helpful to present the picture of the effects that excess of insulin may bring about. The hypoglycemia ensuing under these circumstances is now well known. Hyperinsulinism is no longer a rarity in medical literature. A striking feature, however, is the definite and characteristic insult to the myocardium for which insulin hypoglycemia undoubtedly is responsible. According to studies at the Michael Reese Hospital in Chicago by Soskin, Katz, Strouse and

Rubinfeld,⁴ the detrimental cardiac effects of insulin, when they occur, are due for the most part to the removal of dextrose so vitally needed by the myocardium. As they announce, if it may be supposed (and there is reason to believe that it is so) that the damaged myocardium stores dextrose only with difficulty, then the lowering of the blood sugar by insulin will decrease or remove the heart's source of dextrose supply without at the same time stocking up the myocardium with its carbohydrate needs for the interim. This would be comparable to a rapid lowering of the blood sugar level in a normal animal. The antagonistic actions of insulin and dextrose on the heart are probably, therefore, more apparent than real. In other words, the deleterious action of insulin on the heart is probably not due to a direct toxic action on the myocardium but is rather related to the supply of carbohydrate that is readily available to this organ.

THE INTESTINE AS AN EXCRETORY ORGAN

The excretory system of the body is of immense importance to the welfare of the organism. In man and the higher animals there are no effective devices for storing the end-products of metabolism—the waste of the body. Various structures and functions are evidently destined to promote the elimination of waste products promptly and completely, regardless of whether they are gaseous or nongaseous in character. Students are proverbially reminded that the skin, lungs and kidneys participate in the work of excretion, which involves primarily carbon dioxide, water, and nitrogenous and inorganic waste. Experience unfortunately shows that the renal structures not infrequently fail to perform adequately. This pathologic situation calls for medical resourcefulness. Diuretics are used to promote the excretory action of the kidneys. In former days much effort was directed under such circumstances to enhance the eliminatory function of the skin. Perspiration was promoted by the use of specific diaphoretics as well as by physical methods that tend to increase sweating. Whether such procedures are of value in eliminating "toxins," particularly in uremic conditions, seems rather doubtful today. Sweating is without question an important factor in heat regulation; that is, the elimination of waste heat. Various blood constituents, such as urea, find their way into the sweat; but the actual quantities, even in profuse perspiration, have seemed to be too small to relieve the kidneys to any noteworthy extent.

Recently physiologists have begun to realize the importance of the bowel as an organ of excretion. By this is not meant the removal of materials that have failed to be digested and absorbed. The feces also

3. Williams, J. L., and Dick, G. F.: Decreased Dextrose Tolerance in Acute Infectious Diseases, *Arch. Int. Med.* 50: 801 (Dec.) 1932.

4. Soskin, Samuel; Katz, L. N.; Strouse, Solomon, and Rubinfeld, S. H.: Treatment of Elderly Diabetic Patients with Cardiovascular Disease, *Arch. Int. Med.* 51: 122 (Jan.) 1933.

contain substances secreted into the lumen of the intestine for excretory purposes. This applies notably to iron, calcium and magnesium as well as to certain foreign elements. The large intestine may be regarded as the principal channel for the excretion of insoluble substances that cannot easily be passed out by the kidneys. In former days, purgation was a common procedure in routine practice. Williams and Dick¹ have pointed out that the excretion of water by the intestine has long been recognized as a useful therapeutic procedure, but little emphasis has been placed on the substances excreted with the liquid. The action of the saline cathartics is generally regarded as being due to the large amount of liquid that is abstracted from the blood through the intestinal mucosa by the hypertonic solution.

When kidney function is inadequate, the work of the bowel may be far more important, according to recent reports.¹ Studies at the John McCormick Memorial Institute for Infectious Diseases give a background for the assumption of some "vicarious elimination" through the bowel. According to Williams and Dick, appreciable amounts of the nonprotein nitrogen metabolites are eliminated in the stools by purgation. The higher the concentration of nonprotein nitrogen in the blood, the higher is the concentration in the liquid feces. The therapeutic efficacy of vigorous catharsis and purging is supported by experimental evidence. Sometimes the concentration of nitrogen in the purgation stools was greater than that in the blood. In any event, new interest has become centered in the possible value of the saline cathartics and hydragogues in the treatment of chronic nephritis and chronic myocarditis.

SEASONAL VARIATIONS IN GROWTH

The importance that the phenomena of growth assume in the consideration of child welfare is emphasized by the elaborate deliberations of the recent White House Conference on Child Health and Protection dealing with this subject.² Growth and development are essential—probably the most essential—functions of the young. It is imperative, therefore, to establish dependable standards by which these processes can be gauged. This is far more difficult than may appear at first consideration. Gross increase in weight, in stature or in form are by no means always simultaneous or identical. Many features enter into the conception of growth. They deserve independent evaluation; as Donaldson² wrote many years ago, "The measure of the whole man is neither the number of pounds that he can lift, nor the facts that he can discover, nor the influence that he can exert upon his fellows, nor yet the

age to which he can attain, but something of all these and what they stand for, taken together."

One of the most commonly used procedures to measure growth and to establish "norms" or averages that may be of help in judging the well being of children consists in ascertaining the rate of gain in body weight during well defined intervals of adolescence. Data secured in this manner have led many investigators to conclude that there are what may be termed "cycles of growth" or periods of unusual acceleration followed by relative retardation in gains of weight.³ Among such alleged cycles are so-called seasonal variations of growth. The available facts were reviewed in detail a few years ago by Nylin.⁴ According to a government report⁴ it is the consensus of informed opinion that growth proceeds at maximal rates during the late summer and autumn, continues at considerably reduced rates during the winter, and falls to minimal rates in the spring and early summer. This typical fluctuation has been observed in Danish children in Copenhagen, in Swedish children in Stockholm, in Scotch children in Aberdeen, in German children in Berlin, and in American children in Boston and New York. It is of interest to note, also, that growth in weight is accelerated in the fall (April, May and June) and greatly reduced in the spring (October, November and December) in children of English stock in Melbourne. Such facts lead one to conclude that the cyclic manifestation of physiologic activity is associated in some as yet unexplained manner with seasonal changes.

Under the supervision of the medical officers of the United States Public Health Service, approximately 2,500 native-born white children attending the elementary schools of Hagerstown, Md., were weighed monthly during the school years from September, 1923, to May, 1928. A study of the statistics thus secured has led Palmer⁴ to the conclusion that maximal rates of average growth in weight are observed during the fall months, intermediate rates during the winter, and minimal rates during the spring. The average rate of growth during the summer period is approximately equal to the rates observed during February and March. The same cyclic changes are observed in both sexes and for each yearly age group from the sixth through the fourteenth year. These observations are in agreement, with few exceptions, with the previous work on the subject. During the sixth and seventh years there is no consistent difference between the growth rates of boys and girls. During the eighth and ninth years, boys apparently grow at slightly greater rates than girls. In the spring of the tenth year, the rates for girls become greater than the rates for boys and remain higher for each subdivision of the year

1. Williams, J. L., and Dick, G. F.: The Excretion of Nonprotein Nitrogen Substances by the Intestine, *J. A. M. A.* 100: 484 (Feb. 18) 1933.

2. Growth and Development of the Child, in four volumes, under the editorial direction of Kenneth D. Blackfan, M.D., New York, Century Company, 1932.

3. Donaldson, H. H.: Growth of the Brain, New York, Charles Scribner's Sons, 1903.

3. Robbins, Brady, Hogan, Jackson and Greene: Growth, New Haven, Conn., Yale University Press, 1928.

4. Nylin, Gustav: Periodical Variations in Growth, Standard Metabolism and Oxygen Capacity of the Blood in Children, *Acta med. Scandinav.*, supp. 31, 1929. Added data are given by Palmer, C. E.: Seasonal Variation of Average Growth in Weight of Elementary School Children, *Pub. Health Rep.* 48: 211 (March 3) 1933.

until the fall of the fourteenth year, when the rates for boys become greater and remain so through the fifteenth year. Comparison of the seasonal curve of monthly growth rates with the seasonal curve of incidence of sickness indicates that there is no concomitant variation between the two. It would indeed be interesting—and probably immensely important—to ascertain the factors that are involved in regular seasonal fluctuations. Nylin believed that he observed periodicities in basal metabolism as well as in growth. He assumed that both the growth and the metabolic phenomena are closely associated with the incidence of short waves in the sunlight, but one must hesitate to draw definite conclusions as to the causal relationships that may exist between these various factors.

Current Comment

TEN STATES WITH LOW STANDARDS OF MEDICAL LICENSURE

Doctors, lawyers, pharmacists and members of other professions are licensed in most instances for the protection of the public. Thus the dangers of unskilful ministrations by untrained, and therefore unqualified, persons are in part controlled. The public takes it for granted that practitioners licensed by the state are reliable and may be consulted with reasonable security. Twenty-one years ago, by a merger of two preexisting groups, the Federation of State Medical Boards of the United States was formed. Its purpose was to bring order out of the chaos then prevailing in medical licensure and to enforce reasonable standards of preliminary and professional education for all who would be legally authorized to practice medicine. Though much has been accomplished, much remains to be done before that goal is obtained. The figures reported by the various state boards elsewhere in this issue show that ten states issued 187 licenses to others than graduates of approved medical schools in 1932. California heads the list with sixty-two, because, in that state, a separate osteopathic board confers a license to practice as "physician and surgeon" identical with that issued by the medical board. Massachusetts has the unenviable distinction of having licensed fifty-three, of whom sixteen are osteopaths and thirty-seven graduates of unapproved schools. In Massachusetts the law requires that any graduate of a legally chartered four-year school be admitted to the examination. Illinois ranks third, with thirty-two unqualified licentiates. Although the department of registration and education has power to exclude from the examination graduates of unsatisfactory schools, it has for some years admitted the graduates of one school which is not approved by the Council on Medical Education and Hospitals and to which other state boards refuse recognition. As long as these ten states open their doors to those who are unable to satisfy minimal requirements as to professional training, the public will suffer at the hands of ignorant and unskilled practitioners.

TYROSINOSIS—AN ERROR OF METABOLISM

Clinical medicine for many years has been familiar with peculiarities in the metabolism of certain persons. The anomalies do not interfere ordinarily with the routine of life and are discovered as a rule through the chance of some examination of the involved person for other reasons. Pentosuria, cystinuria and alkaptonuria are illustrations of such conditions that have aptly been described as inborn errors of metabolism. Their incidence not infrequently betrays a presumptive hereditary background of origin. Cystinuria and alkaptonuria are definitely associated with a failure of two amino-acids, cystine and tyrosine, respectively, to be completely disintegrated in the metabolism as they ordinarily are in normal persons. The amino-acids are, of course, derived from either the proteins ingested or those of endogenous source liberated by the tissues of the body. In alkaptonuria the degradation of tyrosine (hydroxyphenylalanine) stops at a stage represented by homogentisic acid (dihydroxyphenyl acetic acid), which normally is further broken down. The clinical manifestations of alkaptonuria, notably the darkening of the urine on exposure to air, have been recognized for more than a century, having been described by Marcet in 1823. Marshall isolated in 1887 what is now known as homogentisic acid, the substrate of the chromogenic changes that darken the urine. A somewhat comparable though evidently distinct anomaly has recently been described by Grace Medes¹ of the University of Minnesota. It likewise involves tyrosine metabolism and has been designated as tyrosinosis. The anomaly was discovered through the peculiar reducing power of the urine that was being examined in routine diagnosis. The patient excreted dihydroxyphenylalanine; he was free from abnormal pigmentation. The endogenous tyrosine metabolism of this patient resulted in a daily excretion of about 1.6 Gm. of hydroxyphenylpyruvic acid together with small quantities of other tyrosine derivatives. Homogentisic acid, when fed, did not reappear in the urine; hence it may be assumed that the anomalous "block" in the degradation of tyrosine occurs before the stage of homogentisic acid formation. Tyrosine derivatives representing earlier steps in the oxidative breakdown tend to be eliminated rather than catabolized. According to Medes, the two errors of tyrosine metabolism now known, alkaptonuria and tyrosinosis, both involve blocks in the oxidation of tyrosine, but at different stages. In tyrosinosis the block occurs following formation of *p*-hydroxyphenylpyruvic acid and consists essentially in the inability of the patient to oxidize the *p*-monohydroxy compound to the 2:5-dihydroxy derivative. He can, however, open the ring previously oxidized in the 2:5 position. In alkaptonuria, the person is able to bring about 2:5 oxidation but cannot further metabolize this compound. On the other hand, he can oxidize the benzene ring by some other route.

1. Medes, Grace: A New Error of Tyrosine Metabolism; Tyrosinosis; the Intermediary Metabolism of Tyrosine and Phenylalanine, *Biochem. J.* 26:917, 1932.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., central standard time, over Station WBBM (770 kilocycles, or 389.4 meters). The subjects for the week are as follows:

April 25. Posture.

April 27. Our Vitamins.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

April 29. Scientific Experiment and Medicine.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Twenty-Ninth Annual Meeting, held in Chicago, Feb. 13 and 14, 1933

(Continued from page 1183)

DR. J. S. McLESTER, Birmingham, Ala., in the Chair

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

FEBRUARY 14—MORNING

MEDICAL ECONOMICS

The Separation of Research from Teaching

DR. WILLIAM T. COUGHLIN, St. Louis: The report of the Committee on the Costs of Medical Care considers all that pertains to the cost of medical care in general, but there is a noticeable absence of data concerning the initial cost of making a physician. Why the omission? An estimate of the present-day annual cost per student is given by the Commission on Medical Education as \$1,183. The fees for tuition alone vary from \$150 to \$700, and, so far as I can find out, they have not become lower because of the depression. In sixty years the time required to be spent in preparation for a degree has increased more than 500 per cent and the increase in the cost is probably as great. If it be allowed that the cost in money paid out is approximately \$10,000, and I make it much lower than is usually given, and to this is added the student's potential earning power while in school—say, \$10,000 more—this gives as his investment \$20,000. If one makes any statement regarding the high cost of medical education in the presence of medical educators, one is quickly informed that the student's education costs the school much more per student than the amount the student is charged. Just how true this is, I am not qualified to say. I do not believe that any one here is.

Is it any more the duty of the state to educate its physicians than it is to educate its teachers, engineers, lawyers and clergymen? There has been a lot of loose talk about the duty of the state to conserve the health of its people. Most of this has been by laymen or physicians in name only. There has been a lot of argument to prove that it is the duty of the state to furnish every one a job. But how much of such talk is by interested individuals who hope to obtain personal benefit from such paternalism!

Why does an ordinary medical school exist? The only good reason is to teach those who wish to study medicine in order that they may live by that profession and render such service as may be rendered by a good general practitioner. There are extraordinary schools, and there is a need for them. These schools should have as their prime object the advancement of medical knowledge. This is an entirely different field from that of medical practice. Is it a fact that some of the expense of what is really graduate teaching has been charged to the account of the medical student? My belief is that more money is being paid out for research than would make up the difference between the total budget and the amount received as students' fees. And all this is being charged to the debt of the student,

whereas it is not his debt at all. The student is paying for at least as much as he gets. I do not believe that every man allowed to engage in research should first be obliged to study medicine, and no more am I convinced that the time spent by a student in the research atmosphere of the laboratory increases in direct proportion his ability or his qualification as a good physician. If a research man can, by his achievement, bring distinction to the institution with which he is connected, he will become a drawing card, especially if the institution is provided with a good advertising department. Such a man is of almost as much value to the institution as a winning football team. But this man must continue in production, otherwise his value will diminish quickly. Since his greatest value to the institution consists in his ability to produce output which will further advertise the institution, is it reasonable to suppose that his teaching or his administrative duties will be performed so faithfully?

I have been approached by candidates for inferior positions in my own department. One of them, 29 years of age, almost as soon as I had met him, told me that he had written forty papers and published twenty! He is doing what passes for research! Now, this being so, what is its effect on the men whom we thus appoint to any position? The answer is evident. We have been making our appointments and promotions for more than twenty years with ability in research as the main consideration. How would it be to try a change? If training in research or research itself is not necessary in the training of the medical student, should we not then rather concentrate our efforts on furnishing him that which is essential to qualify as a physician? This is our first duty. If you are overjoyed with our results under the present system, compare our record, in ordinary appendicitis or in obstetric mortality with that of twenty years ago. Would it be possible to appoint a man to be head of a department on the basis of his teaching and administrative ability alone? And wouldn't it be better for the student to have as chief an able teacher rather than one able in research alone? Is not a great deal of the hospitalization of patients done for minor illnesses and by younger men, improperly trained and fearful of overlooking something? If the proper value is put on teaching, trained teachers will soon begin to appear.

What percentage of the student's money is given for matter taught him should be known, what percentage goes for research from which he derives no direct benefit, and how much of it is given to research from which he derives benefit. Of all that is so abundantly poured out as research can the cost and the value, article by article, be estimated? Can one find out how many persons actually read more than the title? An investigation and an appraisal of our subject ought to be made. It ought to be possible, in dollars and cents, to show just what is being given for teaching, for administration and for research.

Who shall do it? Only a cold-blooded, not personally interested, investigating body could arrive at any correct and worth-while conclusions. To accept the report of an institution in its own behalf will not do. I believe that this is a duty for the Council on Medical Education and Hospitals, made urgently necessary by the majority report of the Committee on the Costs of Medical Care.

Research should not be carried on by the undergraduate school. The medical student derives no more benefit from research than any other citizen and, therefore, its expense should not be charged to his account. The student derives most benefit from his teachers. In considering qualification for a teaching post, it is customary to lay most stress on research accomplishment. This discourages teaching ability. A research man can do his best only when free at any and all hours, and for this reason alone, if for none other, research should be separated from teaching.

DISCUSSION

DR. D. J. DAVIS, Chicago: The most characteristic feature of a modern university is its productive or creative type of scholarship. An educational institution without research is a trade school, sterile and hopeless. This trade school type is what medical education has been trying to get away from for forty years. No more striking example of this could be given in all educational history than the change from the old proprietary medical college in America, where no research was done, to the present-day university medical college invigorated and

enlivened by investigation. It is not likely that we shall go back a half century. What should be the relation of research and teaching within the walls of the institution? It is possible to conceive of separate research and pure teaching departments in a college. There may be some justification for this when special funds are given for a particular purpose or to do some particular piece of work. But even then the teaching department would suffer unless permeated with research and supported by men of the thinking type. Any organization tending to separate the research man from the teaching man is most unfortunate. The productive or research type is so clearly superior in his field in the long run that the pure teacher or transmitter will develop an inferiority complex fatal to progress. The research and the teaching types of mind are not easily separated. All men have to some degree the qualities of both types. The free intermingling of both types is needed, so that each may acquire and absorb from the other the characteristics desirable for progress. The research type should pay more attention to the principles of transmitting information, while the transmitting type should exert himself to do some research, at least. There is a tendency for them to drift apart. Each needs the other, and they should be brought together in every possible way.

Several years ago at Illinois, a curriculum designed to promote cooperation of research and teaching was arranged. We have a hospital with 350 beds, all charity, and all selected cases. These are used both for teaching and for study, some for one and some for the other, but most of the cases serve well for both purposes. In the college there are no research departments as such. All departments carry on both types of work, and both men and work are intermingled as a rule in such a way that they cannot be segregated. We assume that the best students in the class will make the most desirable material for teaching and research. Occasionally a useful man may rise from the ranks of the mediocre or even from the lowest group. Through cooperation with the graduate school of the university, students with the B.S. degree from the upper third are permitted to register for a limited amount of graduate work in lieu of their regular required work. These courses are research in character and taken with the consent of the department for whose regular work graduate work is substituted. Thus it is possible to receive an M.D. and an M.S. at about the same time. Often by accepting an assistantship one goes on as a candidate for the Ph.D. degree. Another thing is done by the graduate faculty. When necessary, it has waived the entrance requirement of a B.S. degree for registration in the graduate school to the extent of permitting students to register for one unit of graduate work in the last semester of the second year. This permits them to start this work before they have completed their work in the fundamental sciences and before they have entered the work of the clinical years. Such measures tend to emphasize this type of work. They direct the attention of both students and faculty, and especially the younger faculty men, to this type of work.

With several of the conclusions of the author I am unable to agree. The spirit of investigation should permeate the undergraduate college. All faculty members should be active, if possible, and at least be interested in research. The students, especially the better ones, should be furnished an opportunity to learn, at least, the methods of research and be trained to appreciate the spirit and attitude of research men. The medical student owes everything he learns to discoveries in the field of medicine, most of them made within the last fifty years or less. Money devoted to investigation in any field is conceded to be the best investment any state has ever made. Medical discoveries cannot be evaluated in dollars and cents. Let one estimate in cash, if one can, even to the student, the value of the contributions of Banting in diabetes, of Murphy and Minot in pernicious anemia, of the Dicks in scarlet fever, of Birch in hemophilia, of Ivy in gastric ulcer, to name only a few recent American discoveries, all made by persons doing research and teaching. Such work is going on every day in our medical colleges. These persons who make such discoveries should not be segregated. They should be brought into intimate relations with both the faculty and the students. The best teachers are those who are making these discoveries. It is clear why, in seeking men to occupy university positions, stress is laid on research ability. It is the only way to obtain outstanding men. Practically all research men desire to do some teaching. During

these times the costs should be reduced. But elimination of research from the medical colleges should be about the last thing attempted in any depression program.

Investigations and Conclusions of the Committee on the Costs of Medical Care

DR. LEWELLYS F. BARKER, Baltimore: This article appeared in full in *THE JOURNAL*, March 25, page 868.

Basic Considerations in Minority Report of Committee on the Costs of Medical Care

ALPHONSE M. SCHWITALLA, S.J., St. Louis: This article appeared in full in *THE JOURNAL*, March 25, page 863.

Prepayment Plans for Hospital Care

DR. R. G. LELAND, Chicago: This article appeared in full in *THE JOURNAL*, March 25, page 870.

DISCUSSION

DR. J. H. J. UPHAM, Columbus, Ohio: The medical profession is a conservative body, necessarily so from bitter experience. Times without number, wonderful discoveries have been announced and panaceas exploited which too often when tested in the greatest of laboratories, general medical practice, have proved disappointing and illusory. Thus the profession has acquired the habit of caution toward the trying out of new suggestions before adopting them in a wholesale way. As a matter of fact, every one of the suggestions of the majority report is being tried out somewhere and some of them in many places in this country today, and their activities are being observed and their results evaluated. The group or clinic plan is in operation in many communities. I do not believe that physicians are prepared yet to endorse or condemn it. I know of a few groups, chiefly in small communities, that appear to be operating satisfactorily. In these, close relations have been maintained with the surrounding practitioners. These groups are not supported by taxation. I know of some groups in which reverse conditions prevail. These are more frequently found in larger centers and are often the source of discontent among the local profession. Practitioners complain of patients lost to them if once they are referred to the clinic, and of the methods of advertising by many clinics. If the city is large enough and one clinic has proved successful, others will surely be organized and competition will follow, the newer ones following the usual business rule of offering more for less money, with the usual effects on the quality of service. Lay invasion of this field has already occurred. Companies organized and controlled by laymen, actuated entirely by the hope of commercial profit, operated by physicians on fixed salaries or commissions, are springing up over the country. They are taking advantage of the publicity given this report and will doubtless insinuate that they are acting in accord with its recommendation. With these dangers in mind, I do not see how the medical profession can endorse this recommendation for general application. The second recommendation has also been tried out in many places with varying success. Theoretically it appears commendable, but there are great practical difficulties. Immunization of children, for instance, to be generally effective, should be placed on the same plane as vaccination against smallpox; in other words, made compulsory. As a member of the Public Policy and Legislative Committee of Ohio for twenty years, with many conflicts with antivaccinationists, I can foresee what that would entail! There is need for further education of the public, of the profession, of the administrative health officers and of the social workers, before the recommendation can be successfully worked out. The third recommendation, of sickness insurance, has much to commend it provided the right of free choice of physicians is maintained. The great difficulty is that this is not acceptable to the insurance companies. Inevitably, when organizations have been organized with cash benefits and free choice of physicians, other competing companies offer medical attention at a lower rate. The economy is at the expense of the physicians and poorer service is the result. This recommendation would more nearly meet the approval of the medical profession if it included the right of free choice of physicians and the language changed to read that "service on an individual fee basis should be insisted on." Dr. Barker states that, "despite the bad patterns established at first in Europe, no

country that has resorted to the principle of insurance has given it up." I think it may be said that this is not because of but in spite of the desires of the practitioners, who are the best judge of the efficacy of the various schemes. It is interesting to note his admission that these measures have not lessened the mortality and have increased the incidence of disease and lengthened the periods of disability. These have been repeatedly urged as arguments against the insurance plans. To my mind the greatest value of the work of the Committee on the Costs of Medical Care will result from the gathering of the great amount of material pertaining to medical practice, health conditions and methods and from drawing the attention of the medical profession to the necessity of studying the facts to the end that solutions may be eventually worked out. It is to be regretted that socialistic individuals, and some sociological workers have seized on the committee's findings as grounds for wholesale criticism of the medical profession.

MICHAEL M. DAVIS, PH.D., Chicago: It was shocking to appreciate that in an average year a population as large as that of the city of Cleveland are faced with sickness bills on their family budgets amounting to one third or one half of their income, and to appreciate that this condition, which in the average will crush a family's finances, is not the fault of the physician or the hospital or the patient, but the fault of a situation for which no single individual or group is responsible. It was important to find that the level of incomes of the profession created before the depression a serious problem, faced by physicians and hospitals, and all of these and other facts and needs which could be recited led to the demand for carefully planned action. One passes naturally to a word concerning the plans referred to in Dr. Leland's paper, relating to provision against the cost of hospital care. As I listened to his paper I was somewhat perturbed by the growing sense of impending doom coming on any one who started a scheme of hospital insurance. I question the reliability of the approach. Mention was made almost entirely of commercialized schemes. Neither the majority report, the minority report, the American Hospital Association, nor any reputable medical or nonprofessional group that I know of favors commercialized schemes at all. No mention was made of the fact that there are in this country at present at least sixteen cities in some of which noncommercial schemes are in operation, and in some, including the larger cities, hospital schemes are being planned. It does not seem to me an entirely scientific procedure to lay before us supposititious evils arising among plans which are started on principles which most of us here would admit are at least worth considering. A positive program is needed in dealing with the problems of the costs of hospital care. What better method is there for fighting commercialized plans which we all wish to propose than by dealing with the needs on which those plans feed? They feed on the needs of the public which existed before the depression, they feed on the needs of the hospitals which are more acute now because of the depression. What significance is there in saying that these plans might lead to the substitution of paying patients in ward beds, and thus violating the principle that the beds were given for charity? It seems important that the approach to this problem from authoritative sources shall look toward at least encouraging desirable professional and noncommercial forms of action. I take it that we look forward to attempts to solve the problem of the high cost of hospitalization. Certainly a layman like myself, in close touch with the hospital world, wishes to see such experiments move forward, wishes to see professional groups who furnish service, administrative groups such as those who manage hospitals, and the public who pay the bills, work together in a solution of these problems.

DR. NATHANIEL W. FAXON, Rochester, N. Y.: We are confronted by the following conditions: First, medical knowledge has outrun the distribution of medical service. Second, the cost of medical care is rising, which is justifiable because the medical care is of a better nature. Third, people find it increasingly difficult to pay for medical care. There is, therefore, more charity now than there has been. Fourth, the income of hospitals from patients, endowments and gifts has lessened. Fifth, there are increased demands on governmental hospitals. We want to achieve, first, adequate medical service to all; second, reasonable remuneration to doctors; third, freedom of choice of doctor and hospital; fourth, distribution of

costs so as to minimize charity to patients and stabilize incomes of doctors and hospitals. How are we going to achieve what we want? I speak only regarding that portion of the problem that deals with hospitals. It is well to remember that hospital outpatient departments, which are essentially group medicine and the adaptation of joint practice, were developed mainly as the result of the endeavor and desire of physicians. They are not the result of immediate economic conditions but are more in the nature of an evolutionary development. The welfare of the hospital is identical with the welfare of its staff, of the physicians of the community and of the community itself. The use or misuse of hospitals lies in the hands of physicians. Dr. Leland has pointed out many evils to be avoided, none of which are necessarily inherently included in group insurance for hospital care. They can be avoided. They are timely warnings but are not conclusions. The American Hospital Association has declared that it "supports the principle of group hospital insurance as a probable economic solution of the distribution of the costs of hospital care." I should like to enumerate certain fundamental principles that should guide the formation of any such plan: First, the public, the doctor and the hospital are equally concerned. Any plan that does not recognize the rights of each group will be unsatisfactory. Second, it should be a cooperative, not a competitive, plan. That is, all hospitals of good standing and all doctors should be included. There should be free choice. Third, the objective is adequate medical care, not profits. Therefore, control must be retained by those interested in that objective. Fourth, it should be based on group insurance rather than on individual insurance, in order to avoid unfavorable selection of risk. Its organization will have to vary with local conditions, as a rule. Fifth, it probably should be carried out by some organization separate from the hospital, with a representative directing board consisting of doctors, representatives of hospitals, social organizations and the public. They should seek legal advice. They may hire a commercial company to promote it, under their direction. I see nothing inherently wrong in an organization of that sort hiring an expert to do its work. Sixth, there is certainly demand for some plan. In Europe this resulted in the present insurance laws, made without direction or interest (except to oppose) of doctors and hospitals. Shall we not learn by their experience and try to shape our destinies, and, if legislation is to come, to direct it?

DR. CHARLES B. WRIGHT, Minneapolis: I represent the average man practicing medicine throughout the country. The matter of medical costs is a problem which I would not attempt to cope with. The government has been trying to fix costs of wheat and everything else, and so far it has been a total failure. I question very much whether we shouldn't be devoting more of our time to discussions of efficient medical service rather than so much time to the cost of it. Fifteen years ago the insurance companies had a maximum fee for the care of an insurance case, and even laws in many states were passed to provide a maximum cost of the care of the patient. Today, the better insurance companies, recognizing the fallacies of that, have opened the bars and provided unlimited service, and what they ask is efficient care and that the man should be returned as quickly as possible to his employment. So I should prefer to talk about efficiency. It is interesting to see such a group as this discussing these economic problems, which we should have been discussing ten years ago. It is interesting to discuss the future trends, but the great problem today is the care of these unemployed people. The medical profession is taking care of them. My income has decreased 50 per cent in the last year, and I am as busy as I ever was. I want it distinctly understood that the physicians of this country are giving service whenever they are asked, as a general rule, to people who are unemployed. The care of the indigent, of course, is another problem, and we know today that no insurance scheme will be of any value to these unemployed or indigent people; that is, so far as a state or municipal scheme is concerned. In the first place, they themselves cannot pay money for insurance, and, in the second place, employers will not pay it for them. A man who was before 1929 a great organizer of business told me that many conservative companies and industries had well established plans for the medical care of their disabled men, but they have all broken down in this period of distress and they have had to junk all of those

plans. A great deal has been said about the trend to centralization of medicine. The trend today is decentralization. And if economic conditions continue, our institutions supported by private philanthropy and by the cities are going to be junked and closed up. In my city we had to do our best to keep open an outpatient service maintained for these people, because the city funds are exhausted and they have overreached their bond issues. No problem of voluntary insurance will ever touch these poor people. That is something for people who are employed. These liability companies are cracking up today because of the demands that have been made on them by applicants for medical and hospitalization privileges, because of unemployment, looking back to some supposed injury which they had previous to their discharge. I want to emphasize that the tendency is to decentralization. Our great medical clinics in groups, not financed soundly, are going to crack if this emergency continues. As one who has practiced medicine for thirty years, as an individual practitioner, I feel that the people today who have a doctor in whom they have confidence are not demanding any different scheme than they have at present.

DR. NATHANIEL W. FAXON, Rochester, N. Y.: The doctor stated his opinions. I should like to ask what his plan is. What is he going to do about it?

DR. CHARLES B. WRIGHT, Minneapolis: In my own community of 500,000, if they are unemployed and have no money, the plan is to send them to the hospitals that are built for that purpose. So far their capacity has been sufficient. We have investigated and could find no one who demanded immediate hospitalization. We have had no claims for hospitalization that could not be taken care of. Our semipublic or philanthropic hospitals are today taking care of a large load of indigent people. Don't forget that we are trying to do this with the present scheme.

DR. MORRIS FISHER, Chicago: Dr. Leland has traveled throughout the United States; he has investigated many schemes of hospital insurance, schemes having to do with corporate practice and contract practice; he has read carefully all the reports of the Committee on the Costs of Medical Care, twenty-six in number; he has visited many medical schools; he has had sent to him from physicians who are the membership of the American Medical Association (and there are 100,000 of them affiliated and associated with hospitals) reports on the actual workings of the schemes as they affect both the medical profession and the public. I would venture to say that Dr. Leland's knowledge today of hospital insurance schemes, contract schemes and similar schemes in their effects on medical practice is equal to, if it does not surpass that of any other trained mind in that field in the United States. The strange development of Mr. Davis's ideas regarding Dr. Leland's competence is interesting in view of the fact that he opened by saying that we must consider this matter with light and without heat, and must avoid personalities. I have heard that cry throughout the United States as I have discussed the report of the Committee on the Costs of Medical Care with various men supporting the majority report. I have found in my brief experience in this field that for every human action there is a personality behind it, and it is difficult to discuss these things without discussing the records of the men who promote the ideas. I have carefully investigated the bibliographies of the men on the Committee on the Costs of Medical Care, and I have found that nobody came out with a different opinion from that with which he went in. I am particularly interested to hear the new song of many of the men who signed the majority report of the Committee on the Costs of Medical Care. "Let us proceed slowly and experiment and study and investigate." That is the new song. But before the Committee on the Costs of Medical Care met in the New York Academy of Medicine to hear the final report, they employed a publicity agent to put over the report. The American medical profession would not have been disturbed if the Committee on the Costs of Medical Care had done what every other scientific investigator does, offer his results and say, "Here they are; see what you can do with them"; but whenever anybody tries to put over a scheme that concerns the nature of medical practice, the problem is one for the medical profession to take up and handle.

DR. A. B. MAGNUS, Chicago: Four years ago, I visited Moscow, the playground of ultrasocialistic and insurance schemes. I was in Russia several months, and I know the

scheme as presented by the majority report is a close neighbor and is following in close proximity the scheme that is presented there. It is a pitiable sight to see. I saw that country where all the physicians are conscripted, where absolutism reigns and compels people to do almost anything in the way of dieting, in the way of walking, that says what they shall read and how they shall rest, and governs their medical care. I didn't have selected agents to lead me, because I knew the language, so I went where I wanted to go. There would be people sitting in the physician's office for a day, in line. The mother who has to leave her family at home has to wait for her turn to get free medical care. After she gets to the doctor in Moscow she pays 50 cents, on the side, to get better attention. If they don't pay for the service, it is not as good. Individualism is entirely abolished. The welfare of the masses is paramount, and the only way to get any kind of care is to bribe the physician. Otherwise the doctor will just look at the tongue, feel of the abdomen, and out you go. Two or three minutes, or five at the most, is what you get. If you hand him 50 cents, or a ruble, he will spend ten minutes with the patient and have him come again, and then the patient will be seen earlier. This is, in brief, the situation in Russia in a nutshell. What one reads here is not a hundredth portion of what the ultrasocialistic insurance schemes would do in the United States.

DR. LEWELLYS F. BARKER, Baltimore: The last speaker knows Russian and was in Russia longer than I was. I was in Russia twenty-five days year before last, and I found a rather different picture. I was in Moscow, Leningrad, down the Volga River, in Odessa, along the Red Sea. I got a very different impression from what has just been heard. I am opposed to Bolshevism, opposed to Sovietism, opposed to the Red idea, but I wish that in parts of our country we had as good care of the women and children from the medical standpoint as they have in Russia. They have done some things that we could do very well to imitate. A professor told me that the medical profession was on the whole pretty well satisfied. I talked with him and his wife very freely, and got a pretty good idea of what is going on there. I have no doubt there are terrible things in certain places. There are in this country. I had to disagree with Dr. Schwitalla about many things, although he was most fair in his presentation. One of the things that I disagree with is the necessity of too much aloofness of the profession from the rest of the world. I think the time has passed when any profession can maintain its aloofness, its priestly situation, in our social and economic system. We have got to adjust ourselves. He said that no pressure from the outside, nothing coercible from the outside, can have any real effect on the advance of medical practice. I cannot agree with that. I think that the discussion that has been aroused will do a vast amount of good, and that we shall look back on the work of the Committee on the Cost of Medical Care as marking an epoch in the history of American medicine.

ALPHONSE M. SCHWITALLA, S.J., St. Louis: The point that Mr. Davis made, that the committee tried to be objective in its findings, is unquestionably true. On the other hand, it should not be forgotten that there was a definite commitment that there would have to be propaganda carried out, not so much for insuring legislation on this point but rather for the purpose of forming the proper mind. I think that was the idea chiefly in the minds of the committee members, that the whole United States should be informed of the findings of the committee. I must say that in all fairness to the committee, and it must not be lost sight of. The American Hospital Association could do no more constructive work than to formulate a set of standards regarding the acceptability of an insurance company for this type of activity. As soon as those standards are formulated, if they are then fine-combed and laid before the groups interested, I think we shall make headway when we have something definite to criticize and study. It is a fallacy, I believe, to say that all groups interested must take a controlling hand in the solving of this problem. I cannot believe for a moment that lay boards should have as much to say about hospitals as the medical men practicing in those hospitals. I do not believe they are competent to judge the real intrinsic soul of the hospital to the same extent to which the medical man is able to judge it. Although it might look like a spirit of fairness to say that the public, the patient, the

medical man and the hospital administrator should have an equal voice, I cannot accept the authority of those three groups on the same level. I cannot see, in this question about group insurance, that the question ought to be gone into on a group plan rather than an individual one. Regarding the financial risk, when one thinks that the risk has to be decreased, one is immediately making the commercial aspects of this matter a controlling thing rather than the medical aspects of it. The approach that Dr. Wright showed is helpful, but I should like to take exception to one remark: He said that the insurance companies are trying to get the men back into normal life as soon as possible. I would not comment on it except for the fact that many people are of the impression that to return a patient to normal family life as soon as possible is the symbol of boom to the hospital. We are trying to judge hospitals by the average days of the patient. It reminds me of other forms of activity. During the war there were constant bickerings between the line officer and the medical corps because the line officer wanted his men back in the trenches, and the medical man knew that the patient was not ready to go back. There are bickerings today between the university health officials and the coaches of the football teams on that point. Many of the universities have minimized the control of the football team by the student health service because the coaches have objected that the medical men on the student health service are keeping the men on their backs too long when they need them for the next game. Men have been on the field when they had no business playing because of their physical condition. I appreciate Dr. Barker's comments. I do not feel, and I hope you will not misunderstand, that the medical man should keep aloof in this sense: that he shall not respond to the stimuli coming from his environment. It is the genotype that determines the way in which the external stimulus is being stimulated by the organism. That is the point I wanted to bring out.

DR. R. G. LELAND, Chicago: As a matter of fact, there are few of the noncommercial hospital schemes in operation in this country today. The most of them, and those which are operated over the largest areas, are commercial. The conclusions that were drawn from these remarks were not ethereal. The original documents can be seen in my office, the contracts and the advertising material and the correspondence, and I have notes of some field studies. Some of these plans actually contemplate the conversion of free bed space into profit-making space. A question which I have asked almost every one who proposes a scheme on a purely ethical basis is, "How are you going to sell it?" And as yet no one has been able to give me a satisfactory answer as to how one is going to sell a perfectly ethical scheme, because group hospitalization depends on large numbers of people. That is one of the premises on which it is based. If it does depend on large numbers, one cannot depend on the individual initiative to come in and buy it. Therefore, these mass production methods need sales force, and if any one can tell me how one can control a sales force selling hospitalization or medical service, I shall be glad to have the information. The medical profession has never opposed any ethical plan for the provision of medical service at a low cost provided it is under the control of the medical profession and it involves standard ethical procedures. I believe that it is possible to formulate some plan which may be an improvement over the plans that have existed in the past. However, I believe that the medical profession should bear in mind always that we have never considered it essential that there be a middleman selling medical and hospital service between the physician or the hospital and the patient, making a profit from the profession and the public.

(To be continued)

Mortality of Burns and Scalds.—Under the old bath and grease treatment, the average mortality was 39.6 per cent burns and 18.8 per cent scalds. In the early days of the picric acid treatment the mortality was 39.7 per cent burns and 7 per cent scalds, and in the last five years of the picric acid treatment the mortality was 15.5 per cent burns and 7.5 per cent scalds, whereas the adoption of tannic acid in October, 1928, and its systematic use in subsequent years has reduced the mortality to 4 per cent burns and 1.7 per cent scalds.—Mitchiner, P. H.: *The Treatment of Burns and Scalds*, *Lancet* 1:238 (Feb. 4) 1933.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Society News.—The Calhoun County Medical Society was addressed, March 21, by Drs. Mürdock S. Equen, Atlanta, on "Foreign Bodies in Food and Air Passages," and Frank K. Boland, Atlanta, "Differential Diagnosis of Abdominal Tumors." Dr. John D. Durden, Anniston, addressed the society, February 7, on pneumonia.—At a meeting of the Geneva County Medical Society in Geneva, March 14, Drs. Earle F. Moody and Vincent J. Thacker, both of Dothan, discussed intestinal obstruction.

ARIZONA

Dr. Truman Appointed State Health Officer.—Dr. George C. Truman, Mesa, took up the duties of state health officer, April 4, following his appointment by Governor B. B. Moeur, who is also a physician. Dr. Truman, who is 30 years of age, graduated from St. Louis University School of Medicine in 1926.

Public Health Meeting.—The sixth annual meeting of the Arizona Public Health Association was held at Tucson, April 17-19, under the presidency of Dr. Alvy N. Crain, Tucson. Speakers included Drs. Frederick T. Foard, Jr., of the U. S. Public Health Service on "Public Health Administration"; Warren F. Fox, El Centro, Calif., "Public Health in Imperial County"; Edwin B. Godfrey, San Bernardino, "Function of a County Health Department," and Karl F. Meyer, Ph.D., of the Hooper Foundation for Medical Research, San Francisco, "Certain Aspects of Undulant Fever." Speakers at other sessions included Drs. Platt W. Covington of the Rockefeller Foundation and Allen K. Krause, Tucson.

CALIFORNIA

Epidemic Septic Sore Throat Reportable.—In accordance with action taken at a meeting of the California Department of Public Health, February 25, epidemic septic sore throat is now reportable. This change was made to distinguish this infection from other forms of septic sore throat.

Botulism from Home Canned Green Peppers.—Two cases of botulism were reported in San Luis Obispo County, one of which proved fatal, according to the bulletin of the state health department, March 4. The source was traced to the consumption of home canned green peppers and to other products which contained green peppers in combination with chile sauce or tomatoes, it was stated. The first victim became ill on the night of February 16, suffering from disturbed vision and paralysis of the throat; he died at noon the next day shortly after entering a hospital. His wife became sick, February 18, and, at the time of this report, was still seriously ill.

Courses for Graduates.—The University of California will offer summer courses for graduates in medicine, June 5-17. The subjects include general medicine, general surgery, otorhinolaryngology, genito-urinary diseases, pediatrics, circulatory diseases, diseases of the blood-forming organs, diseases of the endocrine glands, including diabetes, diseases of the gastrointestinal tract, laboratory diagnosis, pathology and operative technic. In addition there will be noon lectures held daily and clinicopathologic conferences and round table discussions three evenings each week. There will be no charge for lectures, conferences and round table discussions. Complete details may be obtained from the dean of the medical school in San Francisco.

COLORADO

Bill Introduced.—H. 734 proposes to create a state board of osteopathic examiners, to exercise all the rights and powers and perform all the duties now vested by law in the state board of medical examiners with respect to the practice of the healing art by osteopaths. Licenses issued by the osteopathic board are to authorize osteopathic licentiates to practice the healing art, including the practice of medicine, without restriction.

CONNECTICUT

Investigation of Diet for the Poor.—A committee of three members has been appointed by the Bridgeport Medical Society to investigate the city's dietary standards for the poor. It was stated that the discovery of malnutrition and cases of scurvy among those living on food from the city commissary

led to the investigation. The committee, composed of Drs. James D. Gold, Charles H. Sprague and Edwin B. Weldon, will confer with city welfare and health departments.

Diagnostic Laboratories.—Thirty-five laboratories have received the certificate of approval for diagnostic examinations for 1933 from the state health department. Included among these are eight health department, nineteen hospital, four college and three industrial laboratories and one insurance laboratory. Seven of these health department laboratories are also approved for milk tests, as well as three of the hospital laboratories, the insurance laboratory and one of the industrial laboratories.

Society News.—The Tri-Medical Society (Norwich, New London and Willimantic) was addressed at Uncas-on-Thames, March 2, by Dr. Gabriel Tucker, Philadelphia, on diagnosis and treatment of diseases of the lungs. At a meeting of the Hartford Medical Society, March 6, Drs. Walter R. Steiner, Hartford, and Nathan B. Van Eten, New York, discussed the majority and minority reports of the Committee on the Costs of Medical Care, respectively. Dr. William Barclay Terhune, Jr., Stockbridge, Mass., addressed the society, April 3, on "The Psychiatric Approach in General Practice." The New England Obstetrical and Gynecological Society will hold its spring meeting in Hartford, April 26. The daytime program will be composed almost entirely of clinics, and the speaker of the evening will be Prof. William Lyon Phelps, New Haven.

DELAWARE

Society News.—Dr. George Harlan Wells, Philadelphia, addressed the New Castle County Medical Society, March 21, on "Cause and Treatment of Cardiac Pain." Dr. Harold W. Jones, Philadelphia, spoke before the society, February 21, on "Symptoms in Modern Diagnosis."

Bill Enacted.—H. 278 has become a law, amending the narcotic drug act by prohibiting the sale of "cannabis indica, cannabis americana, cannabis sativa, loco weed, Canadian hemp, marajuahana, marajuna, and all allied drugs of the same botanical family," except on the prescription of a licensed physician, dentist or veterinarian.

FLORIDA

Campaign Against Malaria.—Early in March, the Leon County Health Unit began a campaign to eradicate malaria. Inaugurated in Woodville, the work will be extended into other communities of Leon County, including Miccosukee, Chaires, Capitola and Fort Braden, where drainage projects are already under way with the general relief work, newspapers reported, March 24. David B. Lee of the Rockefeller Foundation is engaged in the work, which is being directed by Dr. Leander J. Graves, Tallahassee.

Board of Trustees for Municipal Hospital.—The creation of a board of trustees to manage and operate the Tampa Municipal Hospital was recently endorsed in a resolution adopted by the Hillsborough County Medical Association. It was recommended that the board should be self-perpetuating so that vacancies may be filled by the remaining members, the initial board of five members to be named by the mayor. The resolution, according to newspaper reports, has been approved by the medical and surgical staff and the medical advisory board of the hospital. As this change would require an amendment to the city charter, steps will be taken to have a bill introduced and passed at the next session of the legislature, it was stated.

ILLINOIS

Society News.—Dr. Hugh Cabot, Rochester, Minn., addressed the Peoria City Medical Society, April 4, on "Recent Advances in the Treatment of Infection of the Urinary Tract." Dr. Philip Lewin, Chicago, addressed the Rock Island County Medical Society, March 14, on arthritis.

Bills Introduced.—S. 431 proposes to accord physicians, nurses and hospitals treating persons injured through the fault of other persons liens on all rights of action, claims, judgments, compromises or settlements accruing to the injured persons by reason of their injuries. S. 457 and S. 458 propose to create a board of examiners for "the medical practitioners who practice osteopathy" and to regulate the practice of osteopathy. The board is to be authorized to issue two kinds of licenses: (1) licenses to practice osteopathy in all its branches (according to the teaching of the osteopathic school of practice) and (2) licenses to practice osteopathy in all of its branches, except major surgery. Holders of both kinds of licenses are to be permitted to make and sign birth and death certificates and

to practice in hospitals supported in whole or in part by public taxation. H. 646, to amend the law relating to vital statistics, proposes that a certificate of birth contain, in addition to the data now required by law, a statement of the physical defects of the child, if any.

B. J. Davis, Quack and Impostor.—In December, 1932, a physician in Davenport, Iowa, reported that there had lately located in that town a man who claimed to be an electro-therapist and who gave his name as B. J. Davis. Davis, according to the physician, claimed to have come from Chicago and Kewanee, Ill. The Davenport physician was notified that no man of that name was a graduate of any reputable medical school or licensed to practice medicine in any state. A clipping from the Kewanee (Ill.) *Star-Courier* of Sept. 12, 1932, stated that B. J. Davis, who advertised himself as a chiropractor and physiotherapist, had been arrested by the Kewanee police on a charge of violation of the medical practice act. Now comes a report from Mr. J. E. Edwards, chief inspector of the state department of registration and education, with further information regarding B. J. Davis: In the fall of 1929, Davis was practicing medicine and selling real estate at Rockford without licenses, and Mr. Edwards was instrumental in having him arrested and sentenced to six months in jail. In August, 1932, the department received a complaint that a "Dr. Davis" was practicing medicine in Galva without a license. Investigation showed that it was B. J. Davis, and a report of Davis's previous conviction, together with evidence obtained of violations of both the medical practice act and the real estate act, resulted in his being sentenced to sixty days in jail on one charge, thirty days in jail on the other, and the imposition of a fine of \$300.

Chicago

Program on the Endocrines.—Guest speakers before the Chicago Medical Society, April 26, will be Drs. George W. Crile, Cleveland, and James B. Collip of McGill University Faculty of Medicine, Montreal, in a presentation of a new phase of the endocrines. Their respective subjects will be "Indications for and End-Results of Denervation of the Adrenal Glands" and "Recent Investigations on Anterior Pituitary Hormones."

Dr. Felix Deutsch Lectures.—"Psychogenic Factors in Heart Disease" will be the title of a lecture to be given in the Rothschild Auditorium, Michael Reese Hospital, May 2, by Dr. Felix Deutsch of the University of Vienna. The lecture is under the auspices of the cardiovascular department at Michael Reese Hospital and the Frederick K. Babson Fund. Established four years ago, the fund is principally for clinical and laboratory research in diseases of the heart and circulation. It is administered by Dr. Walter W. Hamburger.

Capps Prize Awarded.—Dr. Eugene L. Walsh, Cleveland, is the recipient of the Joseph A. Capps Prize for 1932, awarded by the Institute of Medicine of Chicago, for his "Studies on the Etiology of Gallstones." Dr. Walsh graduated from Northwestern University Medical School in 1931. The Joseph A. Capps Prize of \$500 is awarded annually for meritorious medical research by a graduate of a medical school in Chicago completed within two years after graduation. At a meeting of the Institute of Medicine of Chicago, April 28, Dr. Walsh will deliver the prize-winning paper, and Dr. Richard H. Jaffe will speak on "Histogenesis of the Valvular Changes in Malignant Endocarditis."

Society News.—Dr. Karen Horney, associate director, Institute for Psychoanalysis, began a course of seven lectures on female psychology, April 18. Physicians and senior clinical students are eligible for the course, to be given Tuesdays. At a meeting of the Chicago Laryngological and Otolaryngological Society, April 3, Drs. Ira Frank and Harry L. Pollock, among others, spoke on "Influence of Sir Phelix Semon on the Development of Laryngology" and "Head and Neck Manifestations in Metabolic Disorders," respectively. Dr. Edward H. Weld, Rockford, Ill., discussed "Calcified Echinococcus Cyst of the Spleen" before the Chicago Surgical Society, April 7, among others, and Dr. Charles B. Huggins, "Experimental Observations on the Epithelium of the Gallbladder and the Genesis of Bone." The Chicago Pathological Society was addressed, April 10, by Dr. George Milles, among others, on "Generalized Lymph Gland Reaction in a Transitional Cell Carcinoma of the Lungs." Speakers before a joint meeting of the Chicago Roentgen Society and the Chicago Urological Society, April 12, were Drs. Noble Sproat Heaney, Herman L. Kretschmer and Eugene Okuly, who discussed "Studies of Changes in the Upper Urinary Tract During the Course of Normal Pregnancy." The Chicago Tuberculosis Society was addressed, April 13, by Drs.

Pol N. Coryllos, New York, on "Indications for Thoracic Surgery in Pulmonary Tuberculosis," and George G. Ornstein, New York, "A Clinical Classification of Pulmonary Tuberculosis."—Drs. Fred L. Adair and Morris Edward Davis gave a paper before the Chicago Gynecological Society, March 17, on "Aminography with Skiodan," and Dr. Edward D. Allen, one on "Studies Concerning the Etiology of Endometriosis." Speakers before the society, April 21, were Drs. Charles B. Reed on "Calcium Problems in Pregnancy," and Jacob P. Greenhill and Herbert E. Schmitz, "Sympathectomy for Intractable Pain in Inoperable Pelvic Malignancy."

INDIANA

Tuberculosis Meeting.—The Indiana Tuberculosis Association will hold its twenty-second annual meeting at the Lincoln Hotel, Indianapolis, April 27. In addition to clinics, the scientific program will include the following physicians as speakers:

Victor H. Bean, Marion, Tuberculosis in Mental Cases.

James H. Stygall, Indianapolis, A New Observation in Pulmonary Tuberculosis.

Herman M. Baker, Evansville, Role of Spirochetes in Pulmonary Disease.

Hubert B. Pirkle, Rockville, Diagnosis of Childhood Tuberculosis.

Robert B. Sanderson, South Bend, Thoracic Surgery.

Personal.—Dr. William V. Stanfield, Attica, has been appointed health officer of Fountain County.—Dr. William McQueen has been named superintendent of the Sunnyside Sanatorium, Oaklandon.—The St. Joseph County Medical Society held a memorial dinner meeting, March 29, in honor of the late Dr. St. Clair Darden, superintendent of Healthwin Hospital. Dr. Jay Arthur Myers, Minneapolis, was the principal speaker; his subject was "Tuberculosis in Children."—Dr. Richard Stephenson, West Lebanon, has been appointed health commissioner of Warren County.—Drs. Ralph W. and Lynn W. Elston, both of Fort Wayne, have been awarded medals of the Purple Heart by the war department in recognition of citations for distinguished service in the World War.

Indianapolis Medical Society News.—Dr. Morris Fishbein, Chicago, editor, *THE JOURNAL*, discussed "State Medicine and Contract Practice" before the Indianapolis Medical Society, April 4. A symposium on blood dyscrasias in children constituted the program of the society, April 11, when Drs. Walter Stoeffler and Louis H. Segar were the speakers. April 18, the society heard Drs. Herbert F. Thurston and Oren E. Carter discuss "Experimental Surgery of Blood Vessels" and "Peripheral Vascular Disease," respectively. The society will meet jointly with the Methodist Hospital staff, April 25. Dr. Horace M. Banks will present a paper on "A Specific Factor in the Etiology of Reactions Following Intravenous Therapy." Dr. Nathaniel G. Alcock, Iowa City, spoke, March 28, on "Transurethral Resection of the Prostate."

Advisory Committee Replaces State Board.—Under a reorganization plan sponsored by Governor McNutt, the Indiana State Board of Health will be replaced by an advisory committee, newspapers reported, April 7. The executive work of the department will be under the direction of an executive secretary. Dr. John H. Hare, Evansville, has been named for this position, succeeding Dr. William F. King, Indianapolis, who had been state health commissioner since 1922. Scientific work of the health department will be carried on in the hospitals and units of Indiana University School of Medicine, Indianapolis, while other work will be done by a staff in the State House annex, where the department has been housed. Sanitary inspection work will be delegated to the state police department. Duties of the division of infant and child hygiene will be assumed by the university through its department of obstetrics. The division will be guided by a committee to be appointed by the dean and composed of members from all sections of the state. Through this change, Dr. Ada E. Schweitzer, Indianapolis, will be removed as director of the division, a position she has occupied since 1919. The new policy has been endorsed by the Indiana State Medical Association, it was stated.

IOWA

Graduate Courses.—Three extension graduate courses have been arranged by the Speakers' Bureau of the state medical association. The first, on neurology and psychiatry, began March 2 in Ames and will extend through May 4. The weekly lectures will be given by Drs. Tom B. Throckmorton, Des Moines; Francis A. Ely, Des Moines; Philip C. Jeans, Iowa City; Clarence E. Van Epps, Iowa City; Andrew H. Woods, Iowa City; William Malamund, Iowa City, and Robert A. Stewart, Independence. A course on diseases of metabolism and endocrinology began at Mason City, March 9, to con-

tinue at weekly intervals through May 18. Physicians participating in this course are James C. Hill, Newton; Joseph Brown, Des Moines; Anton J. Carlson, Chicago; Fred M. Smith, Iowa City; Russell Wilder, Rochester, Minn.; Frank C. Mann, Rochester; Howard L. Beye, Iowa City; Clarence W. Baldrige, Iowa City; Frederick H. Lamb, Davenport; Martin I. Olsen, Des Moines; Henry S. Plummer, Rochester, Minn.; John deJ. Pemberton, Rochester; Julian D. Boyd and Frank R. Peterson, Iowa City; Daniel J. Glomset, Des Moines, and Dr. Van Epps, Iowa City. "Fundamentals in Medicine" constitutes the third course, which began in Waterloo, March 10, to continue each Thursday through May 18. Lecturers in this course include Drs. Alfred W. Adson and Charles Mayo, Rochester; Harry L. Alexander, St. Louis; Paul R. Cannon, Chicago; Walter C. Alvarez, Rochester; Henry L. Ulrich, Minneapolis; Henry P. Wagener, Rochester; Morse J. Shapiro, Minneapolis; Oscar H. Plant, Iowa City, and Dr. Baldrige. Any physician located near the centers where these courses are being presented may enroll.

KANSAS

The Porter Lectures.—The third course of lectures under the Porter Lectureship in Medicine at the University of Kansas School of Medicine, Lawrence-Kansas City, was given, March 28-29, by Dr. John Shelton Horsley, Richmond, Va. The lectures were entitled:

Indigestion: Its Causes, Symptoms and the Principles of Treatment.
Some Aspects of the Problem of Cancer. Cancer of the Stomach.

In 1918, Dr. Joseph L. Porter, Paola, bequeathed to the medical school funds for the stimulation of scholarship and research in the medical school. A portion of the income has been used to provide a scholarship for a worthy student, and the remainder to defray the expenses of an annual lecturer in medicine.

State Medical Meeting at Lawrence.—The seventy-fifth annual meeting of the Kansas Medical Society will be held at the Memorial Union Building, University of Kansas, Lawrence, May 2-4, under the presidency of Dr. James D. Colt, Sr., Manhattan, and with the Douglas County Medical Society acting as host. Physicians included in the scientific program are:

James D. Colt, Sr., Financial Angle of the Medical Profession.

John D. Clark, Wichita, Sterility in Women.

Edward H. Hashinger, Kansas City, Mo., Overweight, Its Causes and Treatment.

Ralph I. Canuteson, Lawrence, Infectious Mononucleosis.

Earle G. Brown, Topeka, Tularemia, Summary of Cases Reported in Kansas.

Albert R. Hatcher, Wellington, Head Injuries.

Harold V. Holter, Kansas City, Trichomonas Vaginalis Vaginitis.

Charles T. Hinshaw, Wichita, Relationship of General Practice to Infantile Paralysis.

Carl F. Nelson, Lawrence, An Evaluation of the Normal.

Lerton V. Dawson, Ottawa, Essential Considerations in Cesarean Section.

Frank R. Teachener, Kansas City, Mo., Differential Diagnosis and Treatment of Intracranial Lesions.

James G. Stewart, Topeka, Cardiac Neurosis.

William H. Young, Fredonia, The Health Officer and the General Practitioner.

Guy E. Finkle, Canton, Some Experimental Work with Rabies.

Lyle L. Woodfin, Osawatimie, Is Chronic Appendicitis a Myth?

Wednesday will be known as guest day. The following physicians will speak:

Philip C. Jeans, Iowa City, Certain Practical Aspects of Nutrition in Childhood.

Arthur A. Pleyte, Milwaukee, Finding Tuberculosis in Apparently Healthy Youth.

Russell L. Haden, Cleveland, The Problem of Chronic Arthritis.

Dean Lewis, Baltimore, Tumors of the Sympathetic Nervous System.

Edward L. Cornell, Chicago, The Physiology and Conduct of Normal Labor.

Ernst H. Lindley, LL.D., chancellor, University of Kansas, Lawrence, also a guest, will speak on "Higher Education and the Medical Profession." Entertainment will include the annual banquet, a golf tournament and luncheons.

MARYLAND

Personal.—Dr. Emil Novak, associate professor of gynecology, University of Maryland School of Medicine and College of Physicians and Surgeons, will discuss the latest developments in endocrinology as they relate to diseases peculiar to women before the annual meeting of the British Medical Association in Dublin, July 26.

Reorganization of Health Department Completed.—With the establishment of the positions of director of milk control and director of food control, the reorganization of the Baltimore health department, undertaken some time ago, has been completed, it is reported. Mr. John M. Lesure, chief of the dairy farm inspection division, and Mr. Ferdinand

A. Korff, assistant director of the bureau of chemistry and food, will be placed in charge of the new positions, it was stated.

Reward for Cancer Research.—Johns Hopkins Hospital, Baltimore, has been made the beneficiary of a \$30,000 trust fund through the will of the late Mrs. Katherine B. Judd, New York. The will provides that an income of \$1,000 be paid annually "to the person who, in the judgment of the trustees, shall have made the greatest advancement toward the discovery of a cure for cancer," while the rest of the income is to be used for the relief of cancer patients, it was reported. A bequest of \$15,000 is made available from the principal on satisfactory proof that a cure for cancer has been discovered and perfected.

Dr. Smith Gives Thayer Lectures.—The sixth course of lectures under the William Sydney Thayer and Susan Read Thayer Lectureship in Clinical Medicine was delivered, April 5-7, by Dr. Theobald Smith, formerly director, department of animal pathology, Rockefeller Institute for Medical Research, Princeton, N. J. Dr. Smith devoted the first two lectures to a discussion of "A Comparative Study of Focal Cell Reaction in Tuberculosis and Allied Disease." He chose "Undulant Fever" for the third lecture. In 1927, friends of the late Dr. Thayer donated a fund to Johns Hopkins University to endow a lectureship. The income of the fund is used to defray the expenses of one or more annual lectures on subjects in clinical medicine, pediatrics, neurology or borderline branches.

State Medical Meeting at Baltimore, April 25-26.—The one hundred and thirty-fifth annual meeting of the Medical and Chirurgical Faculty of Maryland will be held in Baltimore at the Faculty Building, April 25-26. The scientific program includes the following physicians:

Joseph Albert Chatard, president of the faculty, *The Heritage of a Physician. A Tribute.*

R. Tait McKenzie, Philadelphia, *Facial Expression of the Emotions with Special Reference to Violent Effort and Fatigue.*

Charles Bagley, Jr., *Modern Neurologic Surgery: Its Beginning, Progress and Present Status.*

Karl W. Ebeling, *Congenital Duodenal Adhesions.*

Esther L. Richards, *Practical Features in the Study and Treatment of Anxiety States.*

Edwin David Weinberg and Grant E. Ward, *Influence of Diathermy on Bone Regeneration.*

William Darrach, New York, *First Aid Treatment of Fractures.*

There will also be a symposium on medical economics at which Drs. Lowells F. Barker will speak on "Costs of Medical Care"; G. Milton Linthicum, "Conservatism and Radicalism in Medicine," and Robert P. Bay, "Medical Profession in the Cost of Medical Care." A secretaries' conference will be held, April 26. Drs. McKenzie and Darrach will be the Trimble lecturers.

MASSACHUSETTS

Personal.—The honorary doctorate of the University of Paris will be conferred on Dr. Harvey Cushing, emeritus professor of surgery, Harvard University Medical School, Boston, according to *Science*, March 24.—Dr. John J. Curley, Leominster, has been appointed associate medical examiner of the third Worcester district, succeeding the late Dr. Harold P. Blodgett.—Dr. Roy D. Halloran has been selected as superintendent of the Metropolitan State Hospital, Waltham, effective April 1.

Dr. Loewi Gives Dunham Lectures.—Dr. Otto Loewi, professor of pharmacology, Medical Faculty, Karl-Franzens University, Graz, Austria, will deliver two lectures under the Edward K. Dunham Lectureship for the Promotion of the Medical Sciences at Harvard University Medical School. "Humoral Transmission of the Nerve Impulse" will be the title of one lecture, May 4, and "Regulation and Adaptation" of the second, May 11. The lectureship was founded in 1923 in honor of Dr. Edward K. Dunham, who received his degree at Harvard in 1886.

MICHIGAN

Bill Introduced.—H. 441 proposes to prohibit persons licensed to practice optometry from practicing under any name other than their own or under the name of any firm, corporation or association. Nothing in the bill, however, is to prohibit the practice of optometry by a partnership composed of licensed optometrists.

Health Unit Closed.—The Menominee County Child Health Demonstration Unit of the Children's Fund of Michigan was closed, March 15. Financial conditions caused the discontinuance of this unit and make necessary the curtailment of other activities of the Children's Fund throughout the state. The advisory committee of the unit voted to form a county health association to carry out such health activities as may be necessary and possible by a voluntary association.

Dr. Riley Honored.—The completion of fifty years' association with Battle Creek Sanitarium by Dr. William H. Riley was observed at a banquet in his honor, March 21. Dr. Riley is now head of the department of neurology at the sanitarium. Dr. Elmer L. Eggleston was toastmaster, and speakers included George E. Judd, business manager of the sanitarium, and Drs. Charles E. Stewart, Martin A. Mortensen, Charles W. Heald, and Harry B. Knapp, representing the Calhoun County Medical Society. A book, containing the autographs of the assembled guests, was presented to Dr. Riley.

MINNESOTA

Bill Passed.—S. 1679 has passed the Senate, proposing to permit applicants for licenses to practice pharmacy to be examined if they have had two years work at schools of pharmacy and have had at least two years practical experience in hospital pharmacies. This bill proposes, too, that persons now registered as assistant pharmacists, who have worked in hospital pharmacies for four years or more, shall be eligible to be examined for licenses to practice pharmacy, regardless of whether or not they have attended schools of pharmacy.

MISSOURI

Dinner to Dr. Redman.—Dr. and Mrs. Lewis C. Calvert, Weston, gave a dinner, January 25, to Dr. Spence Redman, Platte City, to observe his seventy-first birthday and his fiftieth anniversary in the practice of medicine. Dr. Redman, who is the son of a physician, was an organizer of the Platte County Medical Society and served as its president, secretary and treasurer. He has been secretary of the society consecutively since 1923 and has served as councilor of the twelfth district for the last twenty-six years. Members of the society were guests at the dinner.

Society News.—At a meeting of the Jackson County Medical Society, March 28, Dr. Benjamin Landis Elliott, Kansas City, spoke on "Localization of Brain Lesions with Special Reference to Misleading Symptoms and Signs," and Edgar Allen, Ph.D., dean, University of Missouri School of Medicine, Columbia, "Recent Experimental Evidence Concerning the Function of the Human Ovary."—Dr. Herman L. Kretschmer, Chicago, gave a clinic before the Kansas City Southwest Clinical Society, March 14, on borderline problems in urologic diagnosis. He also gave a clinic for the junior and senior medical students of the University of Kansas Medical School, and addressed a joint meeting of the Kansas City Southwest Clinical Society and the Jackson County Medical Society on vesical neck obstruction.—At a meeting of the St. Louis Medical Society, March 17, Drs. Marcus Pinson Neal, Columbia, spoke on "The Leukocyte Count as an Aid in Diagnosis and Prognosis," and Joseph F. Bredeck, "Blood Differential Counts in Diagnosis and Prognosis."—Dr. John H. Ryan, Maryville, addressed the Buchanan County Medical Society, March 15, on "Surgical Treatment of Diseases Related to Dysfunction of the Autonomic Nervous System."

NEW YORK

Symposium at Saranac Lake.—A two-day medical symposium attended by about 300 physicians was held, February 4-5, at National Variety Artists' Sanatorium, Saranac Lake. Among speakers were:

Dr. Cyrus C. Sturgis, Ann Arbor, Mich., *Intravenous Use of Liver Extract in Treatment of Pernicious Anemia.*

Frank A. Harman, Ph.D., Buffalo, *Clinical Use of Corlin.*

Dr. Edward W. Archibald, Montreal, *Cause of Death Following Thoracoplasty.*

Dr. Louis H. Clerf, Philadelphia, *Diagnosis of Lower Lobe Pulmonary Lesions.*

Dr. Horton R. Casparis, Nashville, Tenn., *Tuberculosis in Children.*

Dr. Edward Rist, Paris, France, *Collapse Therapy of Bronchiectasis.*

Dr. Francis M. Pottinger, Monrovia, Calif., *Exudative Tuberculosis.*

Rules Governing Medical Relief of Indigent.—The Temporary Emergency Relief Administration of New York has drawn up rules for medical relief for the indigent in districts in which relief is furnished on a fee basis. The relief administration authorizes the physician to provide medical care for two weeks, up to a limit of ten visits and an expenditure of \$20. Care for longer periods may be authorized after reinvestigation of any case. In prolonged illness, one visit per week for three months is provided in general, but these cases are handled on an individual basis. Fees are arranged on a basis of not more than \$2 for a home visit and \$1 for an office visit. For obstetrical services in the home \$25 is paid by the relief organization. Other special services are arranged individually, the charges to be in general a reduction of 33⅓ per cent from the ordinary county fee schedule. Physicians participating in this work are to submit separate monthly bills to the commissioner of public welfare, accom-

panied by the original authorization. Prescriptions are all to be filled from the National Formulary or the U. S. Pharmacopeia, bills for proprietary remedies not being reimbursable. Physicians are asked to use inexpensive drugs as far as possible. The Medical Society of the State of New York agreed to request each county medical society to appoint a committee to advise with the local commissioner of public welfare concerning the allocation of cases, proposed changes in policy, complaints and reasonableness of bills. These rules were recommended by the state department of health and a special committee of the state medical society and approved by the executive committee of the council of the state society, March 9. Members of the special committee were Drs. James N. Vander Veer, Albany; Albert G. Swift, Syracuse; Hyzer W. Jones, Utica, and Joseph S. Lawrence, Albany.

New York City

New Pavilion at New York Hospital.—A new pavilion of thirty beds was opened at New York Hospital-Cornell Medical Center, March 13, for the use of part-time members of the staff. Twenty beds are for general surgery and ten for urologic cases. The opening of the pavilion, which brings the total number of surgical beds to 176, marks the expansion of services curtailed by the depression, it was said.

Biggs Memorial Lecture.—Dr. Herman O. Mosenthal delivered the Hermann Michael Biggs Memorial Lecture of the New York Academy of Medicine, April 6, on "Diabetes Mellitus: Problems of Present-Day Treatment." The address was discussed by the following speakers: Drs. Charles F. Bolduan, public health problems; Elliott P. Joslin, Boston, heredity and prevention; Nellis B. Foster, clinical phases, and Louis I. Dublin, Ph.D., recent trends in diabetes mortality.

Protest Restricted Choice of Physicians.—The Bronx County Medical Society recently adopted resolutions protesting against what it called "the present monopoly and discrimination now being exercised in the treatment of employees of the city of New York in compensation cases" and urging that the employees of the city be allowed free choice of physicians in compensation cases. Copies of the resolutions were sent to the other four county societies in New York City with recommendations for adoption by them.

Changes at New York University.—The former department of bacteriology and hygiene at New York University and Bellevue Hospital Medical College has been divided into two departments: bacteriology and preventive medicine. Dr. William H. Park was appointed head of the department of preventive medicine as the first Hermann M. Biggs professor of preventive medicine and K. George Falk, Ph.D., was appointed professor of chemical bacteriology in preventive medicine. The department of therapeutics has been incorporated in the department of medicine, with a separate endowed chair named in honor of former dean Samuel A. Brown. Dr. Arthur C. DeGraff has been appointed the first Samuel A. Brown professor of therapeutics.

NORTH CAROLINA

Bill Enacted.—H. 15 has become a law, repealing the law requiring applicants for marriage licenses to present certificates from licensed physicians certifying to the freedom of the parties to the proposed marriages from certain diseases.

OHIO

Society News.—Dr. Joseph T. Belgrade, Wheeling, W. Va., addressed the Jefferson County Medical Society, Steubenville, February 28, and the Belmont County Medical Society, St. Clairsville, March 2, on "Intradermal and Cutaneous Methods of Testing in Food Allergy."—Dr. Warren C. Breidenbach, Dayton, addressed the Preble County Medical Society, Eaton, March 23, on "Compression Therapy in Pulmonary Tuberculosis."—Dr. John E. Greiwe, Cincinnati, was the speaker at the March meeting of the Clinton County Medical Society, Wilmington, on "The New Physiology of the Heart."—Dr. Earl F. Henderson, New Castle, Pa., addressed the Stark County Medical Society, Canton, March 14, on "Symptoms and Treatment of Peptic Ulcer."

Cancer Campaign.—The sixth annual Postgraduate Day of the Mahoning County Medical Society was held in Youngstown, April 20. The sessions were devoted to discussions of cancer by members of the staff of Memorial Hospital, New York. Dr. James Ewing spoke on "Refinements in Tumor Diagnosis," "Melanoma" and "Specializing in Cancer." Dr. Lloyd F. Craver discussed "Diagnosis and Treatment of Hodgkin's Disease" and "Medical Problems in the Treatment and Diagnosis of Cancer." Dr. Benjamin S. Barringer's

addresses were on "The Past and the Present in the Treatment of Genito-Urinary Carcinoma" and "Radium Treatment of Cancer of the Bladder." Dr. Burton J. Lee addressed the sessions on "Cancer of the Breast" and "The Role of Surgery and the Role of Irradiation in the Treatment of Cancer." Dr. Gordon G. Nelson, Youngstown, was chairman of the committee that arranged the program. The society carried on a campaign of education on cancer, April 13-20, with the cooperation of the Federation of Women's Clubs.

OKLAHOMA

Bills Enacted.—The following bills have become laws: S. 138, prohibiting the cultivation or selling or other distribution of marihuana, cannabis indica or any other preparation made from the botanic genus cannabis, except on the written prescription of a licensed physician, dentist or veterinary surgeon; and S. 139, permitting any person who is above thirty-one years of age and of good moral character and who has had ten years' practical experience in compounding physicians prescriptions in the state, to become a registered pharmacist on passing the examination required by the pharmacy board.

OREGON

Library Presented to Medical School.—Dr. Ernst A. Sommer, Portland, has given his private medical library of about 3,000 volumes to the University of Oregon Medical School. The gift has been designated the Ernst A. Sommer Collection and has been placed in a special room to be used as a faculty and clinical reading room. The facilities of the library are available to the medical profession, medical students and others interested in medical subjects in Oregon and the Pacific Northwest.

PENNSYLVANIA

Personal.—Dr. William A. Haman, Reading, celebrated the fiftieth anniversary of his entrance into medical practice, March 13; the staff of Homeopathic Medical and Surgical Hospital, of which he has been a member since 1891, presented him a bronze plaque to commemorate the occasion.

Philadelphia

Illegal Practitioner Sentenced.—William R. Vaughn, a Negro, was sentenced to three years in the Philadelphia County prison recently after he had pleaded guilty to a charge of practicing medicine without a license and false pretense. A court record was read showing that Vaughn had been convicted for the same offenses in 1929 and sentenced at that time to six months' imprisonment and a fine of \$500.

Personal.—Samuel E. Pond, Ph.D., assistant professor of physiology in the schools of medicine and dentistry, University of Pennsylvania, has resigned to become technical manager of Marine Biological Laboratory, Woods Hole, Mass.—Dr. Leonard Fiske Wilbur, an intern at the University of Pennsylvania Hospital, will go to China in September as a medical missionary in Shansi province. He is a son of former Secretary of the Navy Curtis D. Wilbur.

Instruction in Behavior Problems.—A program of weekly seminars on behavior problems of childhood is being offered to physicians by the William T. Carter Foundation of the University of Pennsylvania in cooperation with the Child Guidance Clinic and the Children's Hospital. Dr. Frederick H. Allen, director of the clinic, has been appointed a special member of the staff of the foundation to direct the seminars. The plan will be carried on for one year on an experimental basis.

Seminars on Gastro-Enterology.—The final group of postgraduate seminars sponsored by the Philadelphia County Medical Society for this season is concerned with gastro-enterology. Lectures have been given by Drs. Harry L. Bockus, on "Management of Diseases of the Liver" and B. B. Vincent Lyon, "Management of Diseases of the Gallbladder." Dr. Henry J. Bartle will speak on "Management of Diseases of the Intestines," April 28, and a general discussion will be held, May 5.

RHODE ISLAND

Narcotic Violation.—Dr. John B. Coffey was committed to the Providence County Jail in December to serve a sentence of one year for violation of the narcotic laws, imposed by the United States District Court of Rhode Island.

Society News.—Dr. Eske H. Windsberg, Providence, addressed the Newport County Medical Society, Newport, January 26, on surgical treatment of pulmonary tuberculosis. —A symposium on diabetes mellitus was presented at a

meeting of the Providence Medical Association, April 3, by Drs. Herman A. Lawson, Louis I. Kramer and Alexander M. Burgess. Dr. Rocco Abbate, Lakewood, presented cases.—Frederic L. Wells, Ph.D., chief of the psychologic laboratory, Boston Psychopathic Hospital, gave a lecture on "Symbolism" at the State Hospital for Mental Diseases, Howard, February 27.—Dr. Eliot A. Shaw, Providence, addressed the Washington County Medical Society, Westerly, April 12, on "Surgical Problems Presented by Patients with Jaundice."

SOUTH CAROLINA

Bill Introduced.—H. 980 proposes to accord compensation to workmen injured in the course of their employment and to the dependents of workmen killed in the course of their employment. Compensation is to be paid also for disabilities resulting from all diseases arising out of any employment covered by the act. Workmen, apparently, are not to have the right to select their own physicians.

TENNESSEE

Personal.—Dr. Edwin W. Cocke, superintendent of Western State Hospital, Bolivar, since 1918, has been appointed state commissioner of institutions. Dr. Wesley W. Wallace, assistant superintendent for four years, succeeded Dr. Cocke at Bolivar.—Dr. Marcus G. Spingarn, Memphis, was appointed a member of the Tennessee State Board of Medical Examiners, March 21, to succeed Dr. Alfred B. DeLoach, who died, March 17. Dr. Spingarn is a member of the urological department of the University of Tennessee College of Medicine and is president of the Memphis Urological Association.

University Appointments.—Dr. William T. Pride, associate professor of obstetrics at the University of Tennessee College of Medicine since 1909, has been appointed head of the department to succeed the late Dr. Percy Toombs. Dr. James R. Reinberger has been promoted to associate professor and Dr. Walter A. Ruch to assistant professor of obstetrics. Dr. Emmett R. Hall, formerly associate professor of dermatology, has been made professor and head of the department of dermatology. Dr. Clement H. Marshall was promoted to associate professor in that department. Dr. John L. McGehee, professor of surgery, has been appointed head of the department of surgery to succeed the late Dr. Louis W. Haskell.

Bills Introduced.—S. 683 proposes to require the board of medical examiners to issue licenses to practice medicine in counties having populations of not less than 21,700 nor more than 21,790, to persons who submit affidavits showing that they are more than 30 years of age, graduates of class B medical schools and have been practicing actively for more than six years. S. 776 proposes to license to practice medicine in McNairy County, disabled soldiers of the World War who have had at least twelve months' service in the medical corps of the army or navy, who are graduate pharmacists from recognized schools of medicine [sic], and who have been actively engaged in the retail drug business and in prescribing and administering drugs for at least ten years in any county or counties coming within the provisions of this act. S. 750 proposes to require the state department of public health to manufacture and distribute to health officers and heads of state institutions such vaccines and other biologic products as the division of laboratories is equipped to produce.

TEXAS

Dr. Cary Honored.—Dr. Edward H. Cary, Dallas, President of the American Medical Association, was guest of honor at a dinner given by the Medical Club of Philadelphia at the Bellevue-Stratford Hotel, April 21.

Bill Passed.—H. 88 has passed the House and Senate, proposing to accord hospitals or clinics rendering hospital services, caring for persons injured through the fault of other persons, liens limited to \$5 for each day of treatment on any rights of action, recoveries or settlements accruing to the injured persons by reason of their injuries.

County Health Officers Appointed.—The following new county health officers have recently been appointed, according to the *Texas State Journal of Medicine*:

Dr. Robert R. Davis, Marfa, Presidio County.
Dr. Lewis E. Turrentine, Tahoka, Lynn County.
Dr. James D. Baucum, Longview, Gregg County.
Dr. Melver Furman, Corpus Christi, Nueces County.
Dr. Jesse W. Hawkins, Lufkin, Angelina County.
Dr. C. Thomas Lynch, Wichita Falls, Wichita County.
Dr. Charles Todd, Dalhart, Dallam County.
Dr. James D. McCann, Raymondville, Willacy County.
Dr. Varney Andrews, Floydada, Floyd County.

WASHINGTON

Society News.—Dr. Guy L. Boyden and B. E. Loomis, D.D.S., Portland, Ore., addressed the Cowlitz County Medical Society in February on chronic maxillary sinusitis and trifacial neuralgia, respectively, and Dr. James W. Henderson, Longview, discussed medical economics.—Drs. Leon G. Woodford, John F. Beatty, William V. Fulton, Everett, and Harold J. Greer, East Stamwood, presented a symposium on diseases of the heart at the February meeting of the Snohomish County Medical Society, Everett.—Dr. Norman M. Keith, Rochester, Minn., addressed the King County Medical Society, Seattle, April 3, on chronic nephritis, and Dr. William V. Mullin, Cleveland, on differential diagnosis of hoarseness.

WISCONSIN

Graduate Course in Obstetrics.—Dr. Arthur H. Curtis, professor of obstetrics and gynecology, Northwestern University Medical School, Chicago, gave the first lecture in a graduate course in obstetrics sponsored by the Milwaukee County Medical Society, March 20. Drs. Henry J. Olson, Albert H. Lahmann, Jr., and Rudolph W. Roethke are continuing the lectures in obstetrics and Drs. Harold W. Shutter, Robert E. McDonald and Roland S. Cron, those in gynecology.

Immunization Program.—Dr. Archibald L. Hoyne, Chicago, will give the first lecture in a graduate course on "Newer Methods of Immunization and Vaccination" in Milwaukee, April 27, sponsored by the Milwaukee County Medical Society. Dr. Frank E. Drew is director of the course. Beginning May 1, clinics will be organized in private hospitals for demonstration of techniques of immunization. The course will close the latter part of May with an address by Henry F. Vaughan, Dr.P.H., Detroit, on "Medical Participation in Public Health Work." This is one point in a threefold plan launched by the society to develop a program of preventive medicine. The society proposes to establish free immunization clinics for the indigent and also to stimulate private physicians to offer immunization and vaccination service at reduced rates.

Urological Society to Meet in Cleveland.—The Wisconsin Urological Society will hold its spring meeting at the Cleveland Clinic, Cleveland, April 28-29. Operative clinics will be held each morning. Friday, April 28, the following program will be presented:

D. Roy McCullagh, Chemistry of the Male Sex Hormone.
Dr. Ernest P. McCullagh, Diagnosis and Treatment of Hypogonadism.
Dr. William E. Lower, Role of the Testes in the Endocrine System.
Dr. Eugene L. Walsh, Experimental Hypophysectomy.
Dr. Bernard H. Nichols, Roentgen Observations in Diagnosis of Renal Tuberculosis.
Dr. William J. Engel, End-Results of Transurethral Resection.
Dr. Russell L. Haden, Relation of Focal Infections of the Genito-Urinary Tract.
Dr. Charles C. Higgins, Further Observations in the Experimental Production of Urinary Calculi.
Dr. Ursus V. Portmann, Radiation Therapy in Cases of Malignancy of the Genito-Urinary Tract.
Dr. George W. Crile, Demonstration of Autogenous Cell.

Dr. Lower will give an address at the annual banquet, entitled "Why the Specialties? Urology." Dr. Walter M. Kearns, Milwaukee, is president of the society.

GENERAL

Credentials Missing.—A duplicate diploma from the College of Medical Evangelists, Los Angeles, and a certificate from the National Board of Medical Examiners are being issued to Dr. Jacob J. Janzen, Miami Mission, P. O. Fort Jameson, Northeast Rhodesia, South Africa, the college reports. Dr. Janzen believes that his original credentials were stolen during a journey from Capetown to Fort Jameson. State boards are urged to watch for these credentials, as it is believed that some one will attempt to use them in the United States. Dr. Janzen graduated from the College of Medical Evangelists in 1931.

Medical Fellowship at Geneva.—A fellowship for graduate study at the medical faculty of the University of Geneva is available to an American for the academic year 1933-1934, under the auspices of the Institute of International Education. To be eligible a candidate must be an American citizen and a graduate of an approved American medical school or the holder of a master's or doctor's degree in a science related to medicine and must have a thorough knowledge of French. Preference will be given to unmarried candidates under 35 years of age, either men or women. The stipend is 3,000 Swiss francs, approximately \$600, which is said to be sufficient for living expenses on a moderate scale.

Pacific Science Congress.—Plans for the fifth Pacific Science Congress, to be held in Victoria and Vancouver, B. C., June 1 to 14, have been announced by the National Research Council of Canada. This congress was to have been held in May, 1932, but was postponed because of economic conditions. The program includes groups of discussions of the biologic and physical sciences. The United States government has been invited to appoint twenty-five delegates and the National Research Council of the United States has been authorized to invite universities and learned institutions in this country to participate. The Pacific Science congresses, which are concerned with scientific problems relating to the Pacific area, have been held previously in Honolulu (1920), Sydney and Melbourne (1923), Tokyo (1926) and Batavia and Buitenzorg (1929). They are organized under the immediate auspices of the national research council or corresponding scientific body of the country in which they are held and under the general sponsorship of the Pacific Science Association. Institutions wishing to appoint delegates are requested to communicate with Dr. William H. Howell, National Research Council, Washington, D. C.

Facilities for Lepers.—Existing facilities for the care and treatment of leprosy persons in Hawaii are adequate for the protection of the public health, if present policies are continued, an investigating board of the U. S. Public Health Service has recently reported to Congress. A survey of facilities for these persons was made in the summer of 1932 under authority of a joint resolution adopted by Congress after the governor of Hawaii had reported that the cost entailed in this care was a burden on the "limited resources of the territory." Members of the U. S. Public Health Service who comprised the board are Drs. James C. Perry, John W. Kerr and George W. McCoy. Facilities for care of lepers consist of Kalihi Receiving Station near Honolulu, Oahu; an outpatient clinic in the city of Honolulu, and Kalaupapa settlement on the island of Molokai, where patients are sent only when they volunteer to go. As of June 30, 1932, Kalihi had 162 lepers under care; Kalaupapa, 430 and released patients in their homes totaled 145. The general admission rate to the leper station in the decade from 1910 to 1920 was 0.36, and that for the decade 1920-1930, 0.16 per thousand, a decrease of about 50 per cent in twenty years. The investigating board concluded that existing facilities are adequate if the present rate of admission continues, although if the policy of voluntary transfers to Molokai is maintained, some expansion at Kalihi will be necessary. More efficient organization for the apprehension of suspects and surveillance of contacts was recommended.

Narcotics Limitation Convention Ratified.—The Department of State at Washington has been notified that ratifications of the Narcotics Limitation Convention drawn up at a conference in Geneva in 1931 had been forwarded to the League of Nations by a sufficient number of countries to insure its going into effect, July 10. The enforcement of this convention is expected to constitute an important step in the suppression of illicit traffic in narcotics. As the manufacture of narcotics in this country is already closely limited to the amount needed for medicinal purposes, the chief advantage to the United States lies in the control of manufacture in other countries, whose surplus constitutes the chief source of supply for the illicit traffic here. Little if any additional legislation or change in enforcement machinery will be necessary, as the government now limits the quantity manufactured, prohibits importation of habit-forming derivatives of opium and the coca leaf and rigidly controls distribution of these substances. Under the system provided by the treaty, each country is to submit annually to a supervisory body an estimate of its needs based on the medical and scientific requirements so far as it relates to domestic consumption. Importation and exportation are to be regulated with a view to preventing accumulation of an excess over these estimates. Each country is required to exercise strict supervision over the amounts of raw material and manufactured drugs in the possession of its manufacturers. The treaty extends control to the distribution of codeine, which had not hitherto been included in international opium conventions, and also to substances prepared synthetically but identical in chemical constitution with opium and coca-leaf derivatives. It includes as well new substances that may be discovered or developed in the future. Export trade in heroin is prohibited unless the drug is desired by the importing country and is consigned to the government. The convention limits the exportation of narcotics generally to shipments for which an import certificate from the country of destination has already been obtained and the standard form of certificate recommended contains a specification that the drug is to be imported for medical or scientific needs.

HAWAII

Graduate Courses Continued.—In accordance with its recently established policy of bringing graduate study to its members, the Honolulu County Medical Society has arranged for two courses of lectures to be given immediately preceding the annual meeting of the Hawaii Territorial Medical Association, April 29-30 and May 1. Dr. Barney Brooks, professor of surgery, Vanderbilt University School of Medicine, Nashville, Tenn., will conduct a course on general surgery, and Dr. William S. Middleton, associate professor of medicine, University of Wisconsin Medical School, Madison, will deliver twelve lectures on internal medicine. Both physicians will appear on the program of the meeting of the territorial medical association.

PHILIPPINE ISLANDS

Society News.—The Philippine Public Health Association, organized in June, 1932, elected the following officers in December: Drs. Jacobo Fajardo, Manila, director of the Philippine Health Service, president; Tranquilino Elicano of the Public Welfare Commission, Manila, vice president, and Hilario Lara of the School of Hygiene and Public Health, secretary.

FOREIGN

Congresses in France.—A meeting of French-speaking physicians practicing radiology and electrolgy will be held in Paris, October 12, at the Paris Faculty of Medicine, under the auspices of the Société Française d'Electroradiologie et de Radiologie Médicales, the Société de Radiologie Médicale Française and the Société Belge de Radiologie. Subjects to be discussed are radiologic examination of the mucosa of the large intestine and the short wave. French-speaking physicians of all countries are invited.—The fourteenth International Congress of Hydrology, Climatology and Medical Geology will be held in Toulouse, October 4-8, under the presidency of Professor Sabatier, honorary-dean, Toulouse Faculty of Sciences, and Professor Abelous, dean, Toulouse Faculty of Medicine and Chemistry. Among subjects announced for discussion are: rare gases of mineral waters; climatic cures and pulmonary tuberculosis; primary nonsuppurative infections of the nervous system; legal control and survey of mineral waters.

Typhus Epidemics in 1932.—Egypt and Russia had the world's severest outbreaks of typhus fever in 1932, according to a summary in the *Epidemiological Report* of the Health Section of the League of Nations. In Egypt the epidemic, which was limited to the Nile delta and did not affect the larger cities, broke out in February and died out the latter part of November, the total number of cases reported being 2,198. In 1931 there were only 265 cases reported. In the European part of the Soviet Union nearly 40,000 cases were reported in the first half of 1932, double the number for the two preceding years together. The number of cases in the Asiatic territories of the union during the first six months of 1932 was 19,250, compared with 3,692 during the whole of 1931. A small outbreak occurred in Chile, 183 cases from the middle of March to November 5. A special form of endemic typhus has been observed in São Paulo, Brazil, in the past three years, the report states. Sixty-eight cases were recognized between October, 1929, and December, 1931, in which the fatality rate ran as high as 80 per cent of the cases identified.

Society News.—The German Society for Internal Medicine held its forty-fifth meeting, April 18-21, in Wiesbaden, under the presidency of Professor Lichtwitz of Berlin.—The thirty-seventh congress of French-speaking alienists and neurologists was held at Rabat, Morocco, April 5-12, under the presidency of Prof. Georges Guillaud, Paris.—An international congress on the care of children will be held in Paris, July 4-9. Eight sections of the congress will be devoted to maternity, early childhood, late childhood, adolescence, abnormal childhood, social service, legal rights of the child and to questions of maternal and child welfare not included under any of these headings. Information may be had from the secretariat, 26, Boulevard de Vaugirard, Paris, XV.—The fifth Sir Charles Hastings Lecture of the British Medical Association was delivered, February 21, at the association house, by Sir Henry Gauvain, on "Sun, Air and Sea Bathing in Health and Disease."—The annual meeting of the Royal Institute of Public Health of England will be held in Blackpool, May 30 to June 4, under the presidency of Viscount Leverhulme.—The seventh congress of the Society for Diseases of Digestion and Metabolism will be held in Berlin, September 25-27, under the chairmanship of Dr. Hermann Strauss, Berlin.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 25, 1933.

The Nomenclature of Smallpox

For some time the mild form of smallpox has existed in this country. It is generally accepted that it breeds true and does not give rise to the severe form of smallpox. The distinction between the two is recognized under the terms *variola major* and *variola minor* in the International List of Causes of Death and in the Nomenclature of Diseases of the Royal College of Physicians. In a letter to the *British Medical Journal*, Dr. C. K. Millard, health officer for Leicester, points out that it is misleading to write and speak of "smallpox" as if there were only one condition. There is no evidence that *variola minor* ever changes into *variola major* either in this country, where tens of thousands of cases have occurred, or in the United States, where the experience is much greater. Dr. Millard refers to an annotation in the *British Medical Journal* in which the one term "smallpox" is used to cover both varieties. He suggests that all returns relating to smallpox should have two columns, one for *variola major* and the other for *variola minor*. The terms "mild smallpox" and "virulent smallpox" do not at all meet the case, for *variola minor* is not always mild and *variola major* is not always virulent. The *British Medical Journal* replies that many epidemiologists and health officers will be in sympathy with Dr. Millard's plea but that it will hardly appeal to the working physician. He has quite enough difficulty in deciding that a particular case is smallpox without having to add a distinction which is hardly within his province and which in the individual case he cannot substantiate. It should be left to the health authorities to declare, on the observation of total cases, what is the prevalent type of smallpox.

The British Post-Graduate Hospital and Medical School

In spite of its wealth of clinical material, its twelve medical schools and a large number of hospitals, London has never had a central graduate hospital and medical school. Two of the smaller hospitals, however, are devoted to graduate work, and the Fellowship of Medicine makes elaborate arrangement for graduate instruction at many hospitals. After three years of delay, arrangements have been completed for the British Post-Graduate Hospital and Medical School at Hammersmith (West London). The hospital is a municipal one under the control of the London County Council, which is now responsible for the whole municipal hospital system of the metropolis. Because of the national importance of a central graduate school, the government proposed to contribute \$1,250,000 toward building and equipment, but the financial stress led to the less costly scheme of \$1,000,000, half of which is to be the contribution of the government. The scheme will have great advantages for the council's hospital system, as it must improve the service. The best medical and surgical skill of the day will be available not only for teaching but also for treatment. The council's own medical staff can attend for graduate study, and patients who require special skill in diagnosis or specialized treatment can be sent from its other hospitals. The staff of the graduate hospital will be appointed and paid by the school, subject to the approval of the council, and the council will contribute toward the cost the sum that would have been payable by it to the staff if it had been in the council's employment for the consultant, laboratory and other work done for the patients. The maintenance and the domestic and nursing staff will be appointed by the council. An agreed number of graduate students will be resident at the hospital, one fourth to be

PARIS

(From Our Regular Correspondent)

March 8, 1933.

Anniversary of Society of Exotic Pathology

The Société de pathologie exotique celebrated recently its twenty-fifth anniversary, at the Institut Pasteur, under the chairmanship of Dr. Roux. The society was honored by the attendance of the president of France. Professor Mesnil gave a detailed definition of "exotic pathology." Professor Brumpt, president of the society, traced the events of the past twenty-five years and set forth the society's present aims. Mr. Albert Sarraut, colonial minister, and formerly governor of French Indo-China, gave a magnificent eulogy of the colonial physicians, whose courageous work had made possible the great extension of French colonial possessions. Films were projected of photographs brought home by Professor Brumpt from his travels in foreign countries. He surveyed the chief endemic parasitic diseases of the American continent and described their etiology and mode of transmission. Mr. Roubaud exhibited films to illustrate the diseases of French Equatorial Africa. Three other scientific sessions followed the inaugural session, each being devoted to the consideration of an important introductory paper. Mr. Sanarelli of Rome took up the pathogenesis of intestinal infections of countries with hot climates. He advanced a theory to the effect that the microbes which cause these diseases do not come directly from the outside, to the digestive tract, but by way of the blood, after having been introduced into the blood stream in the mouth and throat. He applies this theory to cholera, typhoid fever and intestinal anthrax. He likewise regards the internal employment of antiseptics as useless and prefers vaccines and mild purgations. Mr. S. Adler of Jerusalem discussed the mode of transmission of protozoans found in the blood (malaria, leishmaniasis) and their behavior in the organs of *Phlebotomus*, *Stegomyia*, and the like.

Mr. Charles Nicolle took up the problem of whether there is more than one form of typhus, utilizing the agglutination tests. He reached the conclusion that there is the classic or ordinary typhus, and a form of typhus that is transmitted from rat to rat by lice but may be transmitted accidentally to man by fleas.

Association for Study of Sex Problems

At a recent meeting of the Association d'études sexologiques, presided over by Mr. Justin Godart, former minister of public instruction, physicians, sociologists, jurists and parliamentarians took part in a long discussion on birth control and finally turned to the question as to whether abortion is justified in certain cases. Prof. Victor Basch, professor at the Sorbonne, and president of the Ligue des droits de l'homme, pointed out that French law punishes severely birth control propaganda under whatever form it is practiced, although material or apparatus designed for that purpose is sold in large quantities in all drug stores with very little ado about it. He discussed whether persons have a moral right to restrict the birth of children, when it is a question of couples legally married or otherwise. He pointed out that births are most numerous among the underprivileged classes. The husband, too often intoxicated, may produce degenerate children, whereas restrictions are practiced chiefly among the well-to-do classes, in which he said healthy children are more likely to be produced. From the point of view of morals, the question may be raised as to what extent society has the right to control births. While society has an interest in the propagation of the race, it has a greater interest in seeing that the elements of which it is composed shall be sound and without defects. It should

therefore have the right to exert a certain control over births. That is accomplished in the United States by the practice of birth control and by the creation of child welfare centers attached to maternity hospitals, and in England, where the movement is supported by the Anglican church, also in Germany, Japan and soviet Russia. The author submitted for consideration the question of revising the law pertaining to birth control. He brought up also the creation of consultation centers where physicians, aided by social workers, would have the right to give solely prophylactic advice on birth control. Professor Achard spoke of the seriousness of motherhood and childbirth for women, particularly those with tuberculosis or heart disease. He admitted that there are cases in which the physician is justified in interrupting pregnancy, but added that his conscience is the sole judge in selecting the cases. Dr. Jean Dalsace, general secretary of the society, discussed clandestine abortions. He cited detailed statistics on the number that result in immediate mortality and those which result in metritis and salpingitis, which compel women to frequent consultation centers and lead often to operations. Of 133 sterile women desiring children, Dalsace was able to trace eighty-one cases to an abortion. He took up a study of the social, economic and psychologic causes. The remedy does not lie in religious ideas nor in judicial laws. The law of 1920, which places these cases under the jurisdiction of the correctional courts and not under the court of assizes, which nearly always acquit the accused, has not proved effective. In view of the failure of the laws the author recommended two remedies—birth control and legal abortion—which he considered in minute detail. He frankly advocated also sterilization of abnormal, defective and insane persons. He demanded the creation of a compulsory prenuptial certificate, with legalization of supervised abortion. Dr. Toulouse proposed and had adopted by the assembly resolutions giving expression to his ideas. He demanded that unmarried couples be compelled to be married in case of pregnancy, but the assembly refused to endorse this view.

BERLIN

(From Our Regular Correspondent)

March 20, 1933.

International Measures Against Psittacosis

The investigations of the international bureau of health have aided in securing more precise statistics on the incidence of psittacosis in various countries and the adoption of international measures for the prevention of the extension of this disease. Rodenbeck, of the federal public health service, has an article on the subject in the *Reichsgesundheitsblatt*. Up to 1929 the incidence of psittacosis was low, but since 1929 its frequent epidemic appearance has occupied the public mind. As a disease of man, it is an infectious disease caused by a filtrable virus that is easily obtained from the excrements and various organs of animals that have died from the disease. The virus can be transferred to other animals. The incubation period is from seven to fourteen days. The virus retains its virulence up to four months. Healthy virus carriers among the parrots play a part in the transmission of the disease. The source of infection for man is primarily the diseased parrot. During the period 1929-1930, many countries became infected as a result of the importation of parrots from Argentina. Of a total of 800 cases, 215 occurred in Germany, with a mortality of 20.9 per cent. An embargo on the importation of parrots brought an end to the epidemic. Since that time, sporadic cases have been observed until recently. There have been a few slight outbreaks in Cologne, Leipzig (repeated), Breslau, Berlin, and some foreign parts. In each instance, a short time before the appearance of the disease manifestations, one or more parrots had been recently introduced within the area in which the outbreak occurred. A few persons became infected through animal experimentation (in April, 1932, Professor Prausnitz, the direc-

tor of the Hygienic Institute in Breslau was attacked). While an absolute embargo against the importation of parrots proved to be the most effective weapon against the disease, other measures were tried, such as examination of the animals in the foreign country before shipment, supervision of the animals during transportation, and segregation of diseased animals. Epidemics of psittacosis can be prevented by these means, but a few sporadic cases will probably continue to occur in Germany. During the past few months, however, no cases of psittacosis have been reported, doubtless owing to the application of the strict measures just cited.

Hospitals in Relation to Health Insurance

The marked development in the German hospital system was stimulated to an exceptional extent by health insurance. It is not surprising that loss of members and declining receipts in the sick benefit associations (*krankenkassen*) during the years of the economic crisis have had serious effects on the hospitals. From an inquiry that was recently made by the *Gutachterschuss für das öffentliche Krankenhauswesen*, the effects by way of reducing the performance of numerous *krankenkassen* have been plainly visible. Whereas in former years an average of about 60 per cent of hospital inmates and of days of hospitalization fell to the account of the *krankenkassen*, and public welfare services contributed scarcely a third of the hospital patients, in many hospitals today only about one third of the patients are hospitalized through the *krankenkassen*, and the taxpayers have to assume the responsibility for about two thirds of the patients, through the public welfare agencies. For a better understanding of the many difficulties that have confronted the hospitals in the last two years and have occasionally led to serious results, the following statements concerning the mutual relations between health insurance and hospitals, as presented by Dr. F. Goldmann, *oberregierungsrat* in the federal ministry of the interior, in *Der Krankenhausarzt*, are cited. During the rapid development of the German hospitals, the expenditures of the German *krankenkassen* for hospital care increased markedly in an absolute sense and also in relation to other items of expense, as is shown by a survey of the existing conditions in the federally authorized *krankenkassen*. At the beginning of the work, in 1885, the modest sum of 4,500,000 marks (\$1,071,000) was available, but by the end of the century the revenue had increased to 19,600,000 marks (\$4,664,800). By 1913 the expenditures had risen to 58,900,000 marks (\$14,018,200), and by 1925 to 150,200,000 marks (\$35,747,600), with further steady increases, reaching finally, in 1930, the amount of 257,000,000 marks (\$61,166,000). The upswing in the expenditures for hospital care does not correspond, however, to the increase in membership and the augmentations in the charges for hospital care but shows an increased participation of the *krankenkassen* in the important tasks of health conservation through hospital treatment. In 1885 the expenditures amounted to 25 cents per member; in 1900 to 62 cents, and in 1913 to \$1.03, while in the postwar period the figures were \$1.96 for 1925 and \$3.12 for 1930. Of the total expenditures of the *krankenkassen*, the proportion coming under the head of hospital expenditures amounted finally to 15 per cent, or almost twice the proportion for the year 1885, which was 8.5 per cent. In 1930 the total amount expended by the German *krankenkassen* for hospital care and treatment was 297,500,000 marks (\$70,805,000), or 15 per cent of their total expenditures. Hospital care was the second largest item under the head of material performances. Thus, the value of this service is being appreciated more and more. But it will be understood that the sponsors of health insurance, under the influence of the economic crisis, must consider whether they can continue to carry on the self-imposed task on the same broad scale as heretofore or whether they must accept far-reaching retrenchments as inevitable.

During a period of a little less than thirty years, the number of consultations per person more than doubled among the men, while among the women they are now nearly three and a half times what they were before. If one considers further what groups of patients among both sexes are most frequently treated in hospitals, a remarkable change is noticeable. During the period 1911-1913, in the German hospitals for patients with diseases of a physical nature, the most frequent cases among the men involved infectious diseases, while injuries came second, and diseases of the digestive organs, third. During the period 1925-1927, however, diseases of the digestive organs came first; then came infectious diseases, while injuries occupied third place. Similarly, among the women, during the prewar period, infectious diseases came first, diseases of the digestive organs second, and diseases of the urinary and reproductive organs, third (excluding venereal disease). During the period 1925-1927, on the other hand, diseases of the digestive organs occupied first place, as with the men; then came diseases of the urinary and reproductive organs, while the infectious diseases ranked third.

Injuries are among the most frequent causes of incapacity for work among the members of the *kranken-kassen*. When such injuries become less frequent as a result of widespread unemployment, the number of members claiming aid on that score decreases. The leading place that diseases of the urinary and reproductive organs occupy among women is evidence for the fact that the need for institutional treatment of gynecologic disorders is given wide consideration by the *kranken-kassen*. It will be seen that the German hospitals are dependent on the continued existence of an efficient sick benefit service. The close mutual relations between *kranken-kassen* and public and private hospitals demand a hospital policy and a social system that will take account of these facts. Hospitals that are able to weather the storms of economic crises are possible only through intelligent cooperation of the sponsors of health insurance and the hospital administrations and are doubly needed so long as large portions of the population are forced to live under most wretched conditions.

ITALY

(From Our Regular Correspondent)

Feb. 15, 1933.

National Congress of Hygiene

The eighth *Congresso nazionale di igiene* was recently held at Rome, under the chairmanship of Prof. Dante De Blasi, director of the *Istituto d'igiene* at the University of Naples. The chairman said that the purposes of the association are the study and the promotion of hygiene. The association has supported scientific research by creating the "Sclavo prizes" with which to honor the more meritorious workers. The program of the society cannot be realized solely by the specialists in hygiene but requires the cooperation of all physicians, particularly family physicians, who can impart the achievements of hygiene to the mothers, who are most inclined to accept them for the protection of their children. Physical education is being cultivated in Italy on a large scale through the activities of the *Opera nazionale ballilla*. The speaker discussed the new water systems, the sanitation enterprises, hygienic improvements, and the instruments used in the crusade against endemic and social diseases.

Prof. Filippo Neri, of the University of Florence, spoke on the purification of waste waters. Professor Neri exhibited a film showing the purification plant of the city of Berlin. A resolution was adopted to the effect that every project for a new water system be accompanied by a plan for a sewer system and for the purification of waste waters, and that such projects be entrusted solely to persons who have acquired a specific competence at higher institutions or experimental stations.

Bari was chosen as the meeting place of the next congress, which will be held in 1934, and Professor De Blasi was elected president.

A Large New Hospital at Milan

A large civilian hospital is under construction at Milan. It will have a capacity of 1,500 beds, 500 for medicine, 500 for surgery and 500 for the specialties. No ward will have more than six beds, while the wards will be grouped into sections of about thirty beds each. The elimination of porches on the ground floor, and the construction of balconies and galleries, will enable convalescents to be outdoors even on rainy days. The complete cost of the hospital is estimated at 65,000,000 lire (\$3,412,500).

Meeting of Medicosurgical Society

The *Società medico-chirurgica* of Bologna met recently under the chairmanship of Professor Ottolenghi. Professor Putti spoke on "transskeletal traction" by means of wire, and the treatment of fractures. This method, he said, is founded on the principle advanced by Codivilla and is merely a simplification in the method of applying traction. The wire, which is from 15 to 20 cm. long and from 1 to 2 mm. in diameter, is introduced into the skeleton by the transcutaneous route by means of an electrical perforator. The pressure on the wire is exerted from a metal rod to which a weight is attached. In fractures of the femur, the wire is fixed in the inferior lower femoral metaphysis; in fracture of the tibia it passes through either the malleoli or the metaphyseal region. In fractures of the humerus, the condyloid region or the olecranon is selected; in fractures of the forearm, the inferior radio-ulnar epiphysis. The heaviest weights used are 18 Kg. for the lower limb or 10 Kg. for the upper limb. In recent fractures, a traction device remains in place for from four to eight days.

Convention of Catholic Physicians

About 200 Catholic physicians met recently in Florence to discuss subjects of a hygienic and moral nature. Professor Gemelli, rector of the *Università cattolica*, spoke on abortion. Professor Leoncini, of the University of Florence, spoke on induced sterility. Professor Pastori spoke on the eugenic significance and the compulsory features of the premarriage certificate, while Dr. Gedda of Turin considered sex education.

VIENNA

(From Our Regular Correspondent)

March 14, 1933.

The Susceptibility of Tumors to Radiation

Addressing recently the *Medicinisches Doktoren-Kollegium*, Dr. Borak discussed "The Susceptibility of Tumors to Radiation." He considered only the behavior of primary tumors, with especial reference to the complete disappearance of the neoplasm. Probably all tissues may be influenced by roentgen or radium irradiation, but most of them are damaged only in a qualitative sense (degeneration) or quantitative sense (atrophy), and in only a few is a complete anatomic destruction brought about. A malignant tumor has always the same or a greater susceptibility to radiation than its mother-tissue. If a given tumor is derived from a tissue in which a complete destruction is possible, then a complete destruction of the tumor itself can be effected. Such tumors may be termed "susceptible to irradiation by nature." To this class belong tumors of the testis, tumors of the ovary, derived from the ovarian follicles; the lymphosarcomas; the tricho-epitheliomas from the hair follicles; the cutaneous epitheliomas from the epidermis; the carcinomas, which arise from the mucous membranes covered with flat-celled epithelium (the lips, buccal cavity, upper air passages, portio uteri). Only such tumors can entirely disappear, if they are irradiated with quantities of energy sufficient to destroy their initial tissues. All other

tumors, such as adenocarcinomas, sarcomas and gliomas, as well as their mother-tissue, can be damaged only to a varying extent. A complete destruction of "tumors unsusceptible by nature to irradiation" can be accomplished only if they are either (1) absolutely anaplastic; that is to say, if they are entirely different from the nature of their mother-tissue; or (2) in the event of metaplasia into a more favorable type, from the radiologic point of view; for example, if, in the urinary passages, a transformation of the epithelium into a flat-celled epithelium occurs and then a pavement-epithelium carcinoma develops. In applying irradiation, the quantity of energy must be so chosen that the connective tissue does not suffer. In the case of pavement-epithelium tumors, that is easy to accomplish. Glandular epithelium cannot be entirely destroyed without causing necrosis of the connective tissue. Hence, by the application of roentgen rays, glandular tumors cannot be diminished in size and checked in their growth unless one is prepared to risk extensive necroses.

Death of Leopold Moll

The pediatrician Prof. Dr. Leopold Moll has been taken away unexpectedly, in the midst of his work, at the age of 56. As a young physician, Moll attracted attention owing to his unusual powers of comprehension and broad knowledge in medical chemistry. Born in Prague, he attended the university in that city and was called by Professor Ebstein to serve as assistant in the Säuglingsklinik. In 1909 he was summoned to Vienna by Professor Escherich, where he organized the Reichs-Anstalt für Mütter- und Säuglingsfürsorge. By the admission of both mother and child, Professor Moll promoted the idea of breast-feeding. He disseminated the knowledge of infant feeding among the physicians, nurses and the public. From all directions, physicians came to this institute. Medicine is indebted to him for the creation of numerous consultation centers for mothers and for prenatal care. The organization of the movement to provide after-care for convalescent children was his work. More than 25,000 children are indebted to this institution for the recovery of health. He devoted himself especially to tuberculosis, rickets and nervousness in children. He became a leading physician in his field through numerous courses of instruction for mothers, through lectures on nutrition, care and education of sick and healthy children, and by his textbooks, particularly his "Merkbuch für Mütter." Of his more important scientific publications may be mentioned studies on the various foods for infants, pathology and treatment of pyloric spasm, and relation of climate to diseases of children.

Research on the Hearing of Fish

At a recent session of the Gesellschaft der Aerzte in Vienna, Prof. Karl Ritter von Frisch of Munich presented a paper giving an account of his research on the hearing of trained fish. The tympanic membrane and the middle ear, together with the ossicles, are absent in the fish, but many species have one ossicle (Weber's ossicle), which unites the air bladder with the inner ear, and, from the functional point of view, is comparable to the auditory ossicles in mammals. The elimination of this apparatus, as von Frisch was able to show, causes hardness of hearing. In the inner ear of fish, the cochlea and the basilar membrane are wanting, but there is a labyrinth with utricle, saccule and lagena. The old controversy as to whether fish can hear has always awakened interest. Von Frisch trained sheatfish and minnows, and was able to demonstrate that both species react readily to tones; in other words, that they hear. The upper audible limit for the minnow is about 7,000 vibrations in a second, and in dwarf sheatfish about 13,000 vibrations per second. It can be demonstrated that fish are able to distinguish high-pitched tones from one another and even to retain them in the memory, but generally they could not distinguish an interval of less than eight

tones (an octave), although, in some instances, an interval of three tones was distinguished. In fish, the utricle and the superior semicircular canal play no direct part in audition; they possess only dynamic and static functions. On the other hand, the posterior semicircular canal (saccule and lagena) constitutes the auditory organ in the minnow. The low-pitched tones (below about 120 vibrations) are perceived also through the skin. With regard to acuity and range of audition, the ear of the ordinary fish has the same capacity as that of man. The significance of the basilar membrane, which is found developed in the vertebrates beginning with the Amphibia, lies doubtless in the fact that it permits a delicate differentiation of tones. The experiments were carried out chiefly by training the fish to react to certain sounds, the fish learning to recognize, among other sounds, a certain tone as the "feeding-time tone." Even after removal of the utricle, the fish reacted to the sound of the feeding-time tone by dashing off through the water but without preserving any definite direction. Von Frisch was able to show that the sound waves act first on the gas-filled air bladder and then are transmitted through Weber's ossicle to the fluid of the labyrinth.

Conservative Treatment of Severe Arm Injuries

By precise application of modern principles of surgical therapy, it is frequently possible to heal (with preservation of function) severe injuries of the upper extremities, which formerly were treated only by amputation. This phase of surgery was discussed before the Gesellschaft der Aerzte by Dr. Ehalt of the Arbeiter Unfall-Spital and Dr. Oppolzer of the Chirurgische Klinik. In a case cited, the left lower arm of a man aged 31 was caught in a cogwheel. The forearm was torn through, leaving only a strip of skin 3 cm. wide, while the vessels and nerves remained intact. It was, as commonly viewed, a case for amputation; for a single stroke of the shears would have constituted the whole operation. However, the wound was carefully cleansed, and only the skin was sutured. No sutures were applied to the bones, the fascia or the muscles. The limb was then immobilized in an unpadded plaster cast, in an elevated position and with open treatment of the wound. No gas gangrene serum was given. Not until two months later, after the skin had become completely intact, were the bones sutured. In a second case, the patient's right arm had been run over by a vehicle. The skin about the bend of the elbow was torn loose circularly for a stretch of 20 cm.; there was a wide opening of the joint and the muscles arising at the lower end of the humerus were torn loose, while the vessels and nerves projected unprotected through the wound. This injury was treated in accordance with the method of Friedrich; that is, it was carefully excised and after insertion of six drains only the skin was sutured; which was followed by immobilization in a plaster cast, elevated position, and open treatment of the wound. At the end of three months, the patient, whose wound healed by first intention, was able to resume his occupation as truck driver and was able to perform well all his duties. The third case concerned a coachman, aged 68, whose injury was almost identical with case 2. At the end of two months, he was already able to perform all his duties. In spite of his advanced age and poor vascularization, the Friedrich method gave good results. The essential features of the method are to cut and pare away all contused and contaminated tissues, including the recesses of the wound, and then to suture only the skin; no foreign substance is put into the wound; no sutures are applied to the bones, fascia or muscles, and open wound treatment is carried out, with most precise immobilization. It is emphasized that the care of a wound is not a matter of chemistry or serology but a purely surgical undertaking, which, to be sure, requires the expenditure of from two to three hours, but the rewards are great. In a fourth case of severe injury, presented by

Dr. Oppolzer, the patient had suffered, eighteen months previously, a severe laceration of the right elbow joint. The biceps tendon, the radial and ulnar muscle groups, the brachial muscle, the median nerve, the radial nerve and the cubital artery were severed; the joint was opened on the flexor surface; the head of the radius was detached; only the ulnar nerve was intact, though visible on the flexor surface. The lower arm had no further attachments than a posterior span of skin and the triceps tendon of the upper arm. An attempt was made to save the lower arm by means of a vessel suture. The cubital artery was sutured; likewise the joint, the muscles, the biceps tendon and the two severed nerves (median and radial). Coaptation and suturing of the severely lacerated muscles and nerves presented many technical difficulties. At the end of six months, the arm could be readily flexed at the elbow, while the disturbance of sensation was greatly improved. Now, after eighteen months, the patient's condition approaches normal. There is still a slight hindrance of pronation and supination; otherwise the forearm and hand present in all parts normal pulse and sensation, and also motility. Also this case shows clearly that by consistent and precise work on a strictly surgical basis, and the application of conservative methods, most astonishing, favorable results can and must be secured.

TURKEY

(From Our Regular Correspondent)

Ankara, March 21, 1933.

Narcotic Prescriptions

The question of writing prescriptions for narcotics has again come to the attention of the ministry of health. The accounts of narcotics dispensed by pharmacies reveal the necessity of closer restrictions. It was decided at the last session of the health council to fix the maximum amount of narcotics a physician may prescribe; henceforth the dose prescribed is not to surpass half the amount of the maximum dose of any drug and it may not be prescribed for more than five days. With the exception of codeine and ethylmorphine hydrochloride, for which the pharmacist does not need to account, all narcotics listed by the ministry of health come under this decision; they are opium, opium salts and extracts, pantopon and its derivatives and all preparations containing it, all preparations containing more than 0.2 per cent of morphine and its salts with the exception of tincture of opium and powder of ipecac and opium, all preparations containing more than 0.2 per cent of diacetylmorphine and its salts, or more than 0.1 per cent of cocaine or its salts, tropacocaine and its preparations, hasheesh extract and all preparations and derivatives of dicodid, dilaudid, eucodeine and ecgonine.

Institutions for the Tuberculous

The pressing need for beds for the tuberculous has hastened the establishment of a new sixty-bed pavilion at the tuberculosis sanatorium at Halki, in the Sea of Marmora near Istanbul. The continued economic stress with its increase in tuberculosis has resulted in an enormously long waiting list for admission to the government sanatorium, which was established in 1924. The Istanbul society for the prevention of tuberculosis, in cooperation with the Red Crescent society, has opened a fifty bed sanatorium in Erenköy, where there is a fee of \$1.25 a day for private patients. One hundred beds have been set aside for the tuberculous at the Istanbul-Haydar Pasha and fifty beds at the Izmir Hospital for contagious diseases, and the Istanbul municipality has recently opened an eighty bed pavilion for the treatment of open cases. The ministry of education, which operates a preventorium in Istanbul, has recently increased the number of beds to 150. There are two private sanatoriums with fifty and twenty-five beds on other islands in the Sea of Marmora. In 1923 there were 7,312 hospital beds in Turkey; today there are more than 12,000, or

0.85 per thousand of population, representing an increase of 63.6 per cent. Though the number of beds for the tuberculous has been increased to 470, this number is far from adequate. The tuberculosis death rate for thirty-three cities with a combined population of almost 2,000,000 is more than 200 per hundred thousand. It is evident that for a successful tuberculosis campaign there is an urgent need for an addition of at least 2,000 more hospital beds and the establishment of a number of preventoriums, sanatoriums and tuberculosis dispensaries. The Istanbul municipality plans for the erection of a 300 bed tuberculosis hospital. There being no tuberculosis hospitals in Anatolia, the ministry of health and the ministry of national defense plan for the erection of sanatoriums there as soon as economic conditions permit.

Personnel of the Ministry of Health

The ministry of health and social assistance, which is responsible for the appointment of the medical personnel of the government, in 1931 had in its employ 1,103 physicians, 113 pharmacists, 1,214 sanitary inspectors, 431 midwives, 221 nurses, and 515 clerical and other employees, totaling 3,597 persons. The salaries for these persons comes from three sources, the national government, the provincial government and the municipalities. Of the total, the national government provided for the salaries of 583 physicians, 17 pharmacists, 977 sanitary inspectors, 37 midwives, 56 nurses, and 278 clerical and other employees, a total of 1,948 persons. As a result of declining budgets some municipalities have restricted the number of health officers and midwives; others have tried to do without either the physician or the midwife or both; others are trying to compromise by procuring for a small fee the service of a physician. There are therefore a great number of vacancies in the health departments.

The Income Tax in Turkey

Previous to 1926, physicians in Turkey were exempt from taxes; then a law was passed by which physicians, pharmacists, dentists, veterinarians, chemists, lawyers and so on were required to file returns. The physician is entitled to deduct from his gross income his office rent, expenditures for office maintenance, such as heating, lighting, telephone, correspondence, advertising, insurance and the service of attendants, also medical supplies, subscriptions for journals and amounts expended on books, and other taxes imposed on physicians. Dues to professional societies are not deductible, nor is expense incurred in postgraduate study nor the expense of traveling to medical meetings either at home or abroad. Indispensable expenditure not being defined, this item has been a source of friction between the tax collector and the physician who holds that traveling expenses are indispensable, as when he is to testify at court. Taxpayers required to file returns must do so in the Turkish language and must have the bills and receipts verified by a notary public and keep for three years all accounts, bills and receipts for inspection by an officer who at any time may demand to see them. The government estimates the income and augments the taxes by 20 per cent of persons who fail to keep books properly or to present bills and receipts. The rate of tax is 12 per cent up to the first 5,000 pounds (\$2,500) of net income, 15 per cent on a net income from 5,001 to 10,000 pounds, 20 per cent on a net income from 10,001 to 20,000 pounds, 25 per cent on a net income from 20,001 to 50,000 pounds, and 30 per cent on a net income from 50,001 pounds upward.

According to the 1926 law, midwives and nurses in communities with a population of less than 5,000 are exempt from taxes, as are private hospitals for the treatment of the insane and private tuberculosis sanatoriums.

A bill has been introduced into the national assembly to amend the law by replacing the filing of returns by two kinds of taxes, the first to be a fixed tax on all physicians, the second

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Research on the Hearing of Fish

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TURKEY

(From Our Regular Correspondent)

Ankara, March 21, 1933.

Narcotic Prescriptions

The question of writing prescriptions for narcotics has again come to the attention of the ministry of health. The accounts of narcotics dispensed by pharmacies reveal the necessity of closer restrictions. It was decided at the last session of the health council to fix the maximum amount of narcotics a physician may prescribe; henceforth the dose prescribed is not to surpass half the amount of the maximum dose of any drug and it may not be prescribed for more than five days. With the exception of codeine and ethylmorphine hydrochloride, for which the pharmacist does not need to account, all narcotics listed by the ministry of health come under this decision; they are opium, opium salts and extracts, pantopon and its derivatives and all preparations containing it, all preparations containing more than 0.2 per cent of morphine and its salts with the exception of tincture of opium and powder of ipecac and opium, all preparations containing more than 0.2 per cent of diacetylmorphine and its salts, or more than 0.1 per cent of cocaine or its salts, tropacocaine and its preparations, hasheesh extract and all preparations and derivatives of dicodid, dilaudid, eucodeine and ecgonine.

Institutions for the Tuberculous

The pressing need for beds for the tuberculous has hastened the establishment of a new sixty-bed pavilion at the tuberculosis sanatorium at Halki, in the Sea of Marmora near Istanbul. The continued economic stress with its increase in tuberculosis has resulted in an enormously long waiting list for admission to the government sanatorium, which was established in 1924. The Istanbul society for the prevention of tuberculosis, in cooperation with the Red Crescent society, has opened a fifty bed sanatorium in Erenköy, where there is a fee of \$1.25 a day for private patients. One hundred beds have been set aside for the tuberculous at the Istanbul-Haydar Pasha and fifty beds at the Izmir Hospital for contagious diseases, and the Istanbul municipality has recently opened an eighty bed pavilion for the treatment of open cases. The ministry of education, which operates a preventorium in Istanbul, has recently increased the number of beds to 150. There are two private sanatoriums with fifty and twenty-five beds on other islands in the Sea of Marmora. In 1923 there were 7,312 hospital beds in Turkey; today there are more than 12,000, or

0.85 per thousand of population, representing an increase of 63.6 per cent. Though the number of beds for the tuberculous has been increased to 470, this number is far from adequate. The tuberculosis death rate for thirty-three cities with a combined population of almost 2,000,000 is more than 200 per hundred thousand. It is evident that for a successful tuberculosis campaign there is an urgent need for an addition of at least 2,000 more hospital beds and the establishment of a number of preventoriums, sanatoriums and tuberculosis dispensaries. The Istanbul municipality plans for the erection of a 300 bed tuberculosis hospital. There being no tuberculosis hospitals in Anatolia, the ministry of health and the ministry of national defense plan for the erection of sanatoriums there as soon as economic conditions permit.

Personnel of the Ministry of Health

The ministry of health and social assistance, which is responsible for the appointment of the medical personnel of the government, in 1931 had in its employ 1,103 physicians, 113 pharmacists, 1,214 sanitary inspectors, 431 midwives, 221 nurses, and 515 clerical and other employees, totaling 3,597 persons. The salaries for these persons comes from three sources, the national government, the provincial government and the municipalities. Of the total, the national government provided for the salaries of 583 physicians, 17 pharmacists, 977 sanitary inspectors, 37 midwives, 56 nurses, and 278 clerical and other employees, a total of 1,948 persons. As a result of declining budgets some municipalities have restricted the number of health officers and midwives; others have tried to do without either the physician or the midwife or both; others are trying to compromise by procuring for a small fee the service of a physician. There are therefore a great number of vacancies in the health departments.

The Income Tax in Turkey

Previous to 1926, physicians in Turkey were exempt from taxes; then a law was passed by which physicians, pharmacists, dentists, veterinarians, chemists, lawyers and so on were required to file returns. The physician is entitled to deduct from his gross income his office rent, expenditures for office maintenance, such as heating, lighting, telephone, correspondence, advertising, insurance and the service of attendants, also medical supplies, subscriptions for journals and amounts expended on books, and other taxes imposed on physicians. Dues to professional societies are not deductible, nor is expense incurred in postgraduate study nor the expense of traveling to medical meetings either at home or abroad. Indispensable expenditure not being defined, this item has been a source of friction between the tax collector and the physician who holds that traveling expenses are indispensable, as when he is to testify at court. Taxpayers required to file returns must do so in the Turkish language and must have the bills and receipts verified by a notary public and keep for three years all accounts, bills and receipts for inspection by an officer who at any time may demand to see them. The government estimates the income and augments the taxes by 20 per cent of persons who fail to keep books properly or to present bills and receipts. The rate of tax is 12 per cent up to the first 5,000 pounds (\$2,500) of net income, 15 per cent on a net income from 5,001 to 10,000 pounds, 20 per cent on a net income from 10,001 to 20,000 pounds, 25 per cent on a net income from 20,001 to 50,000 pounds, and 30 per cent on a net income from 50,001 pounds upward.

According to the 1926 law, midwives and nurses in communities with a population of less than 5,000 are exempt from taxes, as are private hospitals for the treatment of the insane and private tuberculosis sanatoriums.

A bill has been introduced into the national assembly to amend the law by replacing the filing of returns by two kinds of taxes, the first to be a fixed tax on all physicians, the second

tax fixed according to the income of the physician, the amount of this income to be estimated by the government according to the size of the city, the amount of the office rent and the professional standing of the physician. Istanbul physicians are not in favor of the amendment, maintaining that it would work a hardship on the physician who becomes incapacitated by sickness or who goes abroad to study. It would not be fair to the younger men, as the long established physician's office rent might be about the same while his income may be many times as high.

PRAGUE

(From Our Regular Correspondent)

March 27, 1933.

The Centenary of Czech Medical Terminology

Czech medicine celebrated recently a modest but significant anniversary, the centenary of the Czech medical terminology. The person responsible for this important development was Anton Jungmann, a Prague obstetrician well known in his time. The elaboration of a local terminology strengthened the cultivation of medicine among Czech authors. Jungmann used for this purpose a vocabulary containing more than 3,000 terms, based partly on popular terminology for the designation of diseases and symptoms, partly on new words, which have been taken over to a surprising degree into modern Czech terminology. Because the German terminology was most popular among the local physicians, Jungmann attached to his work another vocabulary translating German medical terms into his new vocabulary. This work must be regarded as one of the most important contributions to the development of Czech medicine, for it culminated in the establishment of the Czech medical faculty in Prague in 1882.

Prof. Karl Kreibich Is Dead

Prof. Dr. K. Kreibich, chief of the dermatologic department of the Prague German Faculty, who died recently, was born in 1869 in a suburb of Prague. He worked with Professor Weichselbaum in Vienna and started his dermatologic career with the dermatologist Professor Kaposi. In 1908 he was nominated to the chair of dermatology on the German Medical Faculty of Prague after the death of the dermatologist Prof. P. J. Pick, where he remained until his death. He was an authority and at the same time unusually popular. In 1912 he was elected dean of the German Medical Faculty of Prague and in 1923 served as a rector of the whole university. He was well known at international dermatologic meetings, where he was many times a brilliant speaker. He was for years president of the German Dermatologic Association of Prague and chairman of the German Association for Combating Venereal Diseases in Czechoslovakia, also an associate editor of the *Archiv für Dermatologie*. He wrote more than 200 scientific papers. He was especially popular with the students because he was well versed in all matters of art. He was a successful writer of several comedies and novels, as well as a painter. In his premature death, Prague has lost one of its most prominent personalities.

Conference on Preventive Medicine

The third Conference of Preventive Medicine, held in the Tatras Mountains, February 10-13, had an attendance of about 120, including foreign guests from Poland and Yugoslavia. The conference was divided into two sections. The first section discussed methods of cooperation between the private practitioner and public health institutions, such as dispensaries and consulting stations. The second section considered the ways and means for the introduction of modern methods into the campaign against infectious diseases. A resolution was passed advocating the modernization of the present law on infectious diseases and the creation of a school of hygiene for the education of public health administrators.

Marriages

WILLIAM F. ENGLEBERT, JR., to Miss Virginia Block, both of Fort Wayne, Ind., in Tuscaloosa, Ala., January 24.

WILLIE KERNS DIX, Richmond, Va., to Miss Avis Clifford Mathews of Atlanta, Ga., February 25.

EARLE RAWLINGS WARE, Fredericksburg, Va., to Miss Jane Tuggle Epes of Richmond, March 11.

CHARLES P. ROBBINS, Winona, Minn., to Miss Helen Dieffendorf of Ionia, Mich., recently.

TOMAS R. YANES, Havana, Cuba, to Miss Manuelita R. Argiuelles, Baracoa, January 23.

BENJAMIN WASCOWITZ to DR. MARIE PICHEL LEVINSON, both of New York, March 9.

STEPHEN A. HARRIS, Steubenville, Ohio, to Miss Madeline Gordon of Bellaire, recently.

NORTON E. WINNARD to Miss Mamie Harrell, both of Eugene, Ore., in February.

STANLEY D. SIMON to Miss Cecile Freiberg, both of Cincinnati, April 2.

Deaths

William Easterly Ashton, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1881; Jefferson Medical College of Philadelphia, 1884; professor of gynecology, Graduate School of Medicine of the University of Pennsylvania; for many years professor of gynecology, Medico-Chirurgical College of Philadelphia; fellow of the American College of Surgeons; was awarded the Distinguished Service Cross for heroism in the World War; author of "Essentials of Obstetrics" and "The Practice of Gynecology"; aged 73; died, March 29, of pneumonia.

John William Young, Grenada, Miss.; Medical Department of the University of Louisiana, New Orleans, 1869; member and past president of the Mississippi State Medical Association; member of the House of Delegates of the American Medical Association, 1910-1912; Civil War veteran; at one time city and county health officer; aged 86; died, February 15, of carcinoma of the prostate.

Moe Robinson, Elizabeth, N. J.; College of Physicians and Surgeons, Baltimore, 1908; member of the Medical Society of New Jersey; on the staffs of the Elizabeth General Hospital, St. Elizabeth's Hospital and Alexian Brothers' Hospital; aged 47; died, March 13, in a hospital at Havana, Cuba, of bronchopneumonia, which developed following sunburn.

Clayton Abraham Mentzer © Hillside, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1914; health officer; aged 47; on the staffs of the Newark (N. J.) City Hospital, Alexian Brothers' Hospital and the Elizabeth General Hospital, Elizabeth, where he died, March 19, of injuries received when struck by an automobile.

George Harrison Nixon, Washington, D. C.; Middlesex College of Medicine and Surgery, Cambridge, Mass., 1921; Georgetown University School of Medicine, Washington, 1929; aged 37; on the staff of the Gallinger Municipal Hospital, where he died, March 9, of perforated peptic ulcer and bronchopneumonia.

Charles George Tilden, Kalona, Iowa; Marion-Sims College of Medicine, St. Louis, 1899; Medical Department of Drake University, Des Moines, 1900; member of the Iowa State Medical Society; aged 60; died, March 17, at Rochester, Minn., of carcinoma of the sigmoid and bronchopneumonia.

George Hooper Mallett, Hendersonville, N. C.; University of Virginia Department of Medicine, Charlottesville, 1885; fellow of the American College of Surgeons; formerly consulting gynecologist to the General Memorial Hospital, New York; aged 69; died, March 22, of heart disease.

Leonard James Turlington, Baltimore; University of Maryland School of Medicine, Baltimore, 1892; member of the Medical and Chirurgical Faculty of Maryland; aged 77; died, March 3, in the South Baltimore General Hospital, of injuries received in an automobile accident.

D. Clinton Guthrie, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1891; member of the Medical Society of the State of Pennsylvania; on the staff of the American Hospital for Diseases of the Stomach; aged 70; died, March 31, of heart disease.

Wilmer Lambert Dickerson, Long Beach, Calif.; Rush Medical College, Chicago, 1893; member of the California Medical Association; formerly professor of therapeutics and materia medica, Barnes Medical College, St. Louis; aged 77; died, March 23, of heart disease.

Clifton Alembe Howell, Oklahoma City; Medical Department of the Tulane University of Louisiana, New Orleans, 1911; member of the Oklahoma State Medical Association; served during the World War; aged 58; died, March 17, of arteriosclerosis and heart disease.

Frank Dewey Bishop, Denver; University of Colorado School of Medicine, Denver, 1924; member of the Colorado State Medical Society; served during the World War; aged 36; died, March 19, in the Mercy Hospital, of myocarditis and exophthalmic goiter.

William Samuel Bushnell, Mansfield, Ohio; College of Physicians and Surgeons in the City of New York, Columbia University, 1893; at one time county coroner; formerly on the staff of the Mansfield General Hospital; aged 64; died, March 21, of myocarditis.

Frank Martin Brooks, Portland, Ore.; University of Oregon Medical School, Portland, 1890; Jefferson Medical College of Philadelphia, 1895; formerly mayor, and member of the school board in Silverton; aged 64; died, January 30, of heart disease.

George Hamlin Washburn, Boston; Harvard University Medical School, Boston, 1886; professor of obstetrics, emeritus, Tufts College Medical School; aged 72; died, March 28, in the Massachusetts General Hospital, of retroperitoneal hemorrhage.

Elmer Louis Boyd, Evansville, Ind.; Rush Medical College, Chicago, 1924; member of the Indiana State Medical Association; on the staffs of St. Mary's and Deaconess hospitals; aged 43; died, March 27, of pneumonia and cerebral hemorrhage.

Thomas Zelinsky, Battle Creek, Mich.; University of Michigan Medical School, Ann Arbor, 1901; formerly mayor of Battle Creek; aged 56; on the staff of the Nichols Memorial Hospital, where he died, February 26, of cerebrospinal meningitis.

Orville Edson Johnson, Winthrop, Mass.; Harvard University Medical School, Boston, 1894; on the staffs of the Winthrop (Mass.) Community Hospital and the Whidden Hospital, Everett; aged 65; died, March 16, in a hospital at Boston.

Alice Catharine Youmans, Delhi, N. Y.; Woman's Medical College of the New York Infirmary for Women and Children, 1899; aged 55; died, January 6, in the Mary Imogene Bassett Hospital, Cooperstown, of erysipelas following influenza.

David Harris Walker, Tuscumbia, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1882; member of the Medical Association of the State of Alabama; bank president; aged 68; died suddenly, March 11, of heart disease.

Harry D. Squair, St. Johns, Mich.; Michigan College of Medicine and Surgery, Detroit, 1897; member of the Michigan State Medical Society; formerly health officer of St. Johns; aged 59; died, March 18, of heart disease and diabetes mellitus.

Alexander Benjamin Sambola, New Orleans; University of the South Medical Department, Sewanee, Tenn., 1904; aged 54; was found dead in bed, February 23, of coronary sclerosis, pulmonary tuberculosis, cirrhosis of the liver and nephritis.

John Pollard La Barre, Ottawa, Ill.; University of Maryland School of Medicine, Baltimore, 1901; veteran of the Spanish-American War; aged 55; died, March 8, in the Jackson Memorial Hospital, Miami, of cerebral hemorrhage.

Zorah Elon Patrick, Winnetka, Ill.; Rush Medical College, Chicago, 1872; Bellevue Hospital Medical College, New York, 1877; aged 82; died, March 6, at the North Shore Health Resort, of myocarditis and bronchopneumonia.

George W. Hinchee, Oklahoma City; Baltimore Medical College, 1894; St. Louis College of Physicians and Surgeons, 1895; member of the Oklahoma State Medical Association; aged 73; died, March 11, of hypostatic pneumonia.

Martin James Larkin, Toledo, Ohio; St. Louis University School of Medicine, 1919; on the staff of the Mercy Hospital; aged 39; died, March 11, of brain abscess following a wound received last July when shot by a robber.

Young Allen Little, Milledgeville, Ga.; Atlanta College of Physicians and Surgeons, 1905; past president of the Baldwin County Medical Society; served during the World War; aged 54; died, March 15, of cerebral hemorrhage.

Charles S. Drury, Natural Bridge, N. Y.; University of Vermont College of Medicine, Burlington, 1879; member of

the Medical Society of the State of New York; aged 76; died, March 18, of carcinoma of the prostate.

Stuart Scott, Newmarket, Ont., Canada; Faculty of Medicine of Trinity College, Toronto, 1885; for many years medical officer of health of Newmarket; formerly member of the board of education; aged 72; died, January 4.

Thomas Jefferson Partridge, Cambridge, Mass.; Boston University School of Medicine, 1889; member of the Massachusetts Medical Society; aged 72; died, February 26, of bronchopneumonia and arteriosclerosis.

Thomas Jefferson Stephenson, Jr., Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1931; aged 24; intern at the Children's Hospital, where he died, March 11, of streptococcal peritonitis.

Charles Ogden Truscott, Ciske, Ill.; Miami Medical College, Cincinnati, 1886; member of the Illinois State Medical Society; formerly village president and postmaster; aged 71; died, February 27, of arteriosclerosis.

Frank Wright Davis, Adams, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1903; served during the World War; aged 56; died, January 13, of carcinoma of the sigmoid and liver.

William Potter Shaw, Berlin, Pa.; University of Maryland School of Medicine, Baltimore, 1893; aged 66; died, March 13, in the Memorial Hospital, Cumberland, Md., of chronic nephritis and myocarditis.

Edgar Hunt Guild, Springfield, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1882; formerly member of the board of health; aged 80; died suddenly, March 22, of chronic myocarditis.

Manning L. Allen, Tama, Iowa; College of Physicians and Surgeons, Chicago, 1893; past president of the Tama County Medical Society; aged 70; died, March 11, of angina pectoris and coronary thrombosis.

John Mills Young, Little Rock, Ark.; Medical Department of Arkansas Industrial University, Little Rock, 1895; formerly county coroner; aged 66; died, March 1, of cerebral hemorrhage and arteriosclerosis.

James H. Lindsey, Bentonville, Ark.; Medical Department of Arkansas Industrial University, Little Rock, 1884; member of the Arkansas Medical Society; aged 71; died, February 2, of angina pectoris.

Frederick C. Ameiss, St. Louis; Missouri Medical College, St. Louis, 1882; member of the Missouri State Medical Association; aged 74; died, March 19, of pernicious anemia and carcinoma of the stomach.

William Henry Harrison Anthony, Plainfield, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1903; on the staff of the Muhlenberg Hospital; aged 53; died, March 15, of heart disease.

Oscar Sprissler, Philadelphia; Jefferson Medical College of Philadelphia, 1892; aged 66; died, March 19, in the Northeastern Hospital, of diabetes mellitus, intestinal obstruction and carcinoma of the spleen.

Thomas William Scanlon, Polo, Mo.; Medico-Chirurgical College of Kansas City, 1905; also a druggist; aged 65; was killed, March 15, when the automobile in which he was driving was struck by a train.

Luther Elonzo Wheat, Lewisburg, Tenn.; University of Nashville Medical Department, 1911; physician and owner of the Wheat Hospital; aged 50; died, March 11, of a self-inflicted bullet wound.

Julian T. McLamore, Megargel, Texas; University of Texas School of Medicine, Galveston, 1897; veteran of the Spanish-American War; aged 57; died, February 6, of influenza and myocarditis.

Benjamin Edward Hedding, National Home, Wis.; University of Pennsylvania School of Medicine, Philadelphia, 1899; aged 59; died, March 17, in Long Beach, Calif., of coronary thrombosis.

Emory Ford McSherry, Dayton, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1910; member of the Ohio State Medical Association; aged 49; died, March 14, of heart disease.

Leeland W. Briggs, Toledo, Ohio; Toledo Medical College, 1892; member of the Ohio State Medical Association; for eight years police surgeon; aged 62; died, March 17, of coronary occlusion.

G. Gilmer Brenizer, Washington University Medical School, St. Louis, 1903; aged 68; died, March 16, of illuminating gas poisoning, presumably self administered.

Benjamin Moore Stephenson, Peoria, Ill.; Medical College of Ohio, Cincinnati, 1885; aged 75; died, March 12, in the John C. Proctor Hospital, of cerebral hemorrhage and arteriosclerosis.

Willard W. Hills, Colorado Springs, Colo.; Denver College of Medicine, 1885; associate member of the Colorado State Medical Society; aged 71; died, March 15, of cerebral arteriosclerosis.

Leon Clive Havens @ Montgomery, Ala.; Harvard University Medical School, Boston, 1918; director of laboratories of the state board of health; aged 41; died, March 19, of heart disease.

Thomas L. McCloy, Wilkesburg, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1905; aged 52; died, March 13, in the Providence Hospital, Beaver Falls, of carcinoma of the rectum.

Eugene E. Webster, Woodhull, N. Y.; College of Physicians and Surgeons, Baltimore, 1882; county coroner; member of the board of education; aged 76; died, March 15, of bronchial asthma.

Cuthbert S. Wigg, Boonton, N. J.; Bellevue Hospital Medical College, New York, 1880; member of the Medical Society of New Jersey; aged 76; died, March 2, of carcinoma of the colon.

Thomas Clarence Dodds, Hartford City, Ind.; Eclectic Medical Institute, Cincinnati, 1898; for six years member of the board of education; aged 57; died, March 13, of coronary thrombosis.

Isaac N. Roberson, Nancy, Texas; Baylor University College of Medicine, Dallas, 1905; member of the State Medical Association of Texas; aged 67; died, January 1, of heart disease.

S. Merrill Tilson @ Indianapolis; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; aged 56; died, March 22, of acute myocarditis and renal colic.

John P. Aloysius McParlan @ New York; Bellevue Hospital Medical College, New York, 1891; on the staff of St. Francis Hospital; aged 65; died, March 19, of pneumonia.

Howard Ethanon Whitney, Otsego, Mich.; Hahnemann Medical College and Hospital, Chicago, 1895; served during the World War; aged 59; died, March 11, of heart disease.

Elmer Henry King, New York; Medical School of Maine, Portland, 1913; on the staff of the New York City Cancer Institute Hospital; aged 54; died, March 15, of heart disease.

Robert Hooper Smith @ Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1924; aged 35; died, March 5, in the Union Memorial Hospital, of lobar pneumonia.

John George Rohrig @ Davenport, Iowa; State University of Iowa College of Medicine, Iowa City, 1909; aged 49; died, March 25, in the Mercy Hospital, of perforated gastric ulcer.

George Frederick Yates, Chicago; Rush Medical College, Chicago, 1888; aged 69; died, March 23, in the Wesley Memorial Hospital, of injuries received in an automobile accident.

Samuel N. Schneider, Evanston, Ill.; Chicago Homeopathic Medical College, 1880; member of the Illinois State Medical Society; aged 75; died, March 16, of myocarditis.

Earl Lee Overholt, Fostoria, Ohio; Rush Medical College, Chicago, 1898; member of the Ohio State Medical Association; aged 63; died, March 15, of angina pectoris.

Leon H. Mayo, Birmingham, Ala.; Medical Department of the University of Alabama, Mobile, 1906; aged 50; died, March 12, in the Hillman Hospital, of brain tumor.

George E. Muns, Montgomery City, Mo.; University of Missouri School of Medicine, Columbia, 1880; formerly postmaster; aged 76; died, March 17, of myocarditis.

Samuel Mason, Pennville, Ind.; Indiana Medical College, Indianapolis, 1873; Civil War veteran; formerly bank president; aged 88; died, March 16, of heart disease.

Henry Stuart Krug, St. Louis; Trinity Medical College, Toronto, Ont., Canada, 1895; aged 60; died, March 20, of cerebral hemorrhage, while visiting in Detroit.

Robert R. Teller, Miami, Fla.; Victoria University Medical Department, Coburg, Ont., Canada, 1881; aged 77; died, January 19, of chronic nephritis and uremia.

Stephen Johnson D. Meade, Fort Thomas, Ky.; Pulte Medical College, Cincinnati, 1885; aged 75; died, March 15, of cerebral hemorrhage and arteriosclerosis.

Jonas Risting Nannestad, Albert Lea, Minn.; University of Christiania, Norway, 1890; aged 68; died, March 12, of acute dilatation of the heart and influenza.

Mary Campbell McIntyre @ Kalamazoo, Mich.; University of Michigan Medical School, Ann Arbor, 1925; aged 40; died, March 13, of pulmonary tuberculosis.

Josiah J. Schrock, Greentown, Ind.; Medical Department of Western Reserve University, Cleveland, 1887; aged 77; died, March 10, in Gary, of pneumonia.

Robert Hall Moore, Trenton, N. J.; Kentucky School of Medicine, Louisville, 1894; aged 63; died, March 14, of coronary thrombosis and arteriosclerosis.

Horace Robert Hawkins, Xenia, Ohio; Homeopathic Hospital College, Cleveland, 1892; aged 60; was found dead in bed, March 15, of heart disease.

William Joseph Nesbit, Detroit; Western University Faculty of Medicine, London, Ont., Canada, 1913; aged 44; died in March, of heart disease.

Fred Goldfrank, Darien, Conn.; Columbia University College of Physicians and Surgeons, New York, 1903; aged 55; died, March 13, of heart disease.

Henry Everard Barr, New Wilmington, Pa.; Jefferson Medical College of Philadelphia, 1900; aged 60; died suddenly, March 12, of heart disease.

Elijah J. Post, Benton Harbor, Mich.; Hahnemann Medical College and Hospital, Chicago, 1891; aged 77; died, March 2, of cerebral hemorrhage.

James Henry Voris, Conway, Ark.; University of Arkansas School of Medicine, Little Rock, 1901; aged 55; died, February 7, of heart disease.

David W. Ogden, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1892; aged 72; died, March 9, of endocarditis.

Wilber Laurin Hutchison, Easton, Pa.; Jefferson Medical College of Philadelphia, 1923; aged 35; died, March 20, of a self-inflicted wound.

Otis B. Salley, Augusta, Ga.; University of Georgia Medical Department, Augusta, 1879; aged 77; died, March 2, of myocarditis and nephritis.

Cullen Bryant Maxson, Jersey City, N. J.; Cornell University Medical College, New York, 1904; aged 54; died, March 27, of pneumonia.

Nils Omsted, Stoughton, Wis.; University of Christiania, Norway, 1883; aged 73; died, February 28, in the Community Hospital, of pneumonia.

Charles J. Parris, Newcastle, Texas; Memphis (Tenn.) Hospital Medical College, 1909; aged 55; died, March 7, in a sanatorium at Olney.

Valorous A. Thomas, Nelson, Neb.; Jefferson Medical College of Philadelphia, 1897; aged 76; died, January 17, of cerebral hemorrhage.

Charles Edmund Scullin @ Peoria, Ill.; Rush Medical College, Chicago, 1903; aged 54; died suddenly, March 23, of angina pectoris.

George Newton Powell, Laketon, Texas; Missouri Medical College, St. Louis, 1883; aged 74; died, Dec. 9, 1932, of diabetic gangrene.

Nelson Holland Young, Canandaigua, N. Y.; Medical College of Ohio, Cincinnati, 1896; aged 58; died, January 10, of heart disease.

Thomas Henry Line, Grafton, Neb.; Rush Medical College, Chicago, 1881; aged 74; died, February 25, of cerebral hemorrhage.

Ephraim Lutz Shumaker, Louisville, Ill.; Miami Medical College, Cincinnati, 1881; aged 74; died, March 1, of cerebral hemorrhage.

James Edgar Townsley, Cincinnati; Columbus Medical College, 1889; aged 76; died, February 6, of cerebral hemorrhage.

Hans Rasmussen @ Milwaukee; Jefferson Medical College of Philadelphia, 1896; aged 65; died, March 15, of coronary thrombosis.

Harry Hayford Colburn @ Boston; Medical School of Maine, Portland, 1895; aged 61; died, March 12, of chronic nephritis.

Thomas Vaden Brooke, Sutherlin, Va.; Medical College of Virginia, Richmond, 1872; aged 88; died, March 12, of senility.

Daniel Iverson Dahl, Becker, Minn.; Fort Wayne (Ind.) College of Medicine, 1898; aged 68; died, March 14, of heart disease.

George P. Norton, Tampa, Fla.; Meharry Medical College, Nashville, Tenn., 1897; aged 67; died, February 8, of endocarditis.

Correspondence

USE OF CARBON DIOXIDE IN ANESTHESIA

To the Editor:—I am wondering whether your reply to a question as to the toxicity of carbon dioxide in Queries and Minor Notes (THE JOURNAL, February 18, p. 519) is entirely safe. In 1829, Hickman reported experiments in which he had put animals into a state of unconsciousness during which they were insensitive to surgical trauma, by exposure to the gas evolved when sulphuric acid was added to carbonate of lime. Paul Bert (La pression barométrique, Paris, 1878) wrote: "Small animals exposed to varying percentages of carbon dioxide in the presence of 'ample oxygen' do not die until concentrations of 30 per cent are reached." Haldane and Smith (The Physiological Effects of Air Vitiated by Respiration, *J. Path. & Bact.* 1:168, 1892) reported that human subjects exposed to 10 per cent carbon dioxide in the presence of ample oxygen "became stupefied." In his book on Respiration (1921), Haldane remarks that the quieting effect on respiration of excess concentrations of carbon dioxide probably led early observers to overlook the stimulation of breathing caused by lower concentrations. Loewy and Zuntz (Ueber die Bedeutung des Sauerstoffmangels und der Kohlensäure für die Innervation der Athmung, *Arch. f. Physiol.*, 1897, p. 379), working with animals, found maximum increase in pulmonary ventilation at 15 per cent carbon dioxide. When higher concentrations were used, breathing volume was reduced by the "onset of narcosis." Hill and Flack (The Effect of Excess of Carbon Dioxide and of Want of Oxygen upon the Respiration and the Circulation, *J. Physiol.* 37:77 [June 30] 1908) noted an increase in blood pressure, most marked with concentrations of from 10 to 25 per cent. When the inspired atmosphere exceeded 25 per cent concentration of carbon dioxide, circulatory depression was noted. They thought that in normal men the effect of increasing concentrations of carbon dioxide was stimulant to respiration until 10 per cent was reached, after which progressive depression of ventilation was developed. E. W. Brown (Value of High Oxygen in Preventing Physiological Effects of Noxious Concentrations of Carbon Dioxide, *U. S. Nav. M. Bull.* 28:523 [July] 1930) referred to much of the foregoing work and reported his experiments, with submarine personnel of the navy as subjects. He found among other things that a maximum stimulation of respiration was reached at 10.4 per cent carbon dioxide. The average maximum time which this concentration could be tolerated by healthy men without marked subjective symptoms was two and a quarter minutes. He noted individual variations in the reaction of different men under identical conditions. He checked the influence of excess oxygen concentration and found that it did not change his results. Finally he says, "It is not believed that any of the subjects could have withstood 10 per cent carbon dioxide for longer than ten minutes without losing consciousness."

Although the usefulness of carbon dioxide in clinical therapy is admitted by a host of writers, words of warning are scattered throughout the literature. J. Ross Mackenzie (Carbon Dioxide in Gas and Oxygen Anesthesia, *Brit. J. Anaesth.* 4:92 [Oct.] 1926) cites cases of carbon dioxide overdosage in anesthesia, as I also have (Waters, R. M.: Carbon Dioxide: Its Place in Anesthesia, *Canad. M. A. J.* 17:1510 [Dec.] 1927. Waters, R. M.; Wineland, A. J., and SeEVERS, M. H.: Carbon Dioxide and Oxygen Problems in Anesthesia, *Anesth. & Analg.* 10:10 [Jan.-Feb.] 1931). The latter emphasizes the fact that clinical patients may vary widely from the normal as to chemical balance and acid base equilibrium and may therefore in certain cases react very differently to increases in carbon dioxide tension in the inspired atmosphere as compared with normal individuals

or laboratory animals. Peiper and Cammann (Kohlensäure bei den Atemstörungen der Neugeborenen und Frühgeburten, *Monatschr. f. Kinderh.* 53:323 [June] 1932) recently reported graphic records of effects of carbon dioxide mixtures with oxygen, administered to premature infants. They found that the changes were not regular and noted in a number of cases "shock reactions" at the beginning of administration.

There is, then, quite general agreement that a concentration of more than 10 per cent carbon dioxide in the inspired atmosphere produces unconsciousness in normal animals and men. Much higher concentrations are required to produce respiratory depression in normal individuals. All investigators agree that circulation is markedly stimulated with slight increases in carbon dioxide, while depression of cardiac muscle may accompany higher concentrations. The lack of agreement as to the exact concentration for maximum stimulation, both of respiration and of circulation, may be due, as suggested by Brown, to the fact that subjects dislike to expose themselves to increased carbon dioxide tension for long periods.

From personal experience, I am convinced that the variation in reactions, noted by several workers, in different normal individuals under identical conditions is greatly exaggerated when one deals with people suffering from various disease states. Abnormalities in the physiologic balance of the respiratory center as well as of the chemistry of the body fluids may be factors causing such variations. In attempting to induce ether anesthesia by means of carbon dioxide-oxygen mixtures, several times I have suddenly found the patient precipitated into a marked respiratory depression or even arrest, without first having noted the usual hyperpnea to be expected under such circumstances. Such a depression or apnea may be accompanied by a grayish pallor indicative of marked circulatory depression as well. The class of cases in which these experiences occurred were those in which acid-base balance disturbances were common, although laboratory support of the presence of such abnormality previous to anesthesia was lacking. Afterward, chemical examination of the blood in one case showed definite severe decrease in carbon dioxide combining power. The ill advised use of carbon dioxide is illustrated by the following case: An infant was given an ether anesthesia accompanied by marked respiratory obstruction. Color was kept pink by a high tension of oxygen maintained in the atmosphere, which passed the obstruction with each respiratory effort. A carbon dioxide-oxygen mixture was foolishly administered on the release of the obstruction at the end of operation, without consideration being given to the already high blood carbon dioxide likely to be present accompanying respiratory obstruction. Both respiratory and circulatory depression were immediate and the baby died within a short time. I fully appreciate the possible damage which may occur from prolonged respiratory obstruction, yet I believe that the carbon dioxide added at the end of this anesthesia was no small factor in causing the death.

I believe that carbon dioxide is several times more toxic than ethylene or nitrous oxide. In view of this fact, I feel justified in questioning your statement that "carbon dioxide, when administered with ample oxygen during or after anesthesia, is entirely nontoxic." Your statement may be relatively true in normal individuals. However, patients come to the operating room in various stages of physiologic disturbance. The respiratory center may be overstimulated or it may be depressed. The acid-base balance may be deviated toward acidosis or toward alkalosis. The same conditions obtain in cases in which carbon dioxide therapy may be contemplated in the wards of the hospital. Indication for the use of carbon dioxide, it seems to me, should be the need for the production of a definite physiologic effect, which carbon dioxide is known to produce. Only careful clinical observation can determine the proper dose in a given case, either in concentration or length of time over which that

Benjamin Moore Stephenson, Peoria, Ill.; Medical College of Ohio, Cincinnati, 1885; aged 75; died, March 12, in the John C. Proctor Hospital, of cerebral hemorrhage and arteriosclerosis.

Willard W. Hills, Colorado Springs, Colo.; Denver College of Medicine, 1885; associate member of the Colorado State Medical Society; aged 71; died, March 15, of cerebral arteriosclerosis.

Leon Clive Havens ♂ Montgomery, Ala.; Harvard University Medical School, Boston, 1918; director of laboratories of the state board of health; aged 41; died, March 19, of heart disease.

Thomas L. McCloy, Wilkesburg, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1905; aged 52; died, March 13, in the Providence Hospital, Beaver Falls, of carcinoma of the rectum.

Eugene E. Webster, Woodhull, N. Y.; College of Physicians and Surgeons, Baltimore, 1882; county coroner; member of the board of education; aged 76; died, March 15, of bronchial asthma.

Cuthbert S. Wigg, Boonton, N. J.; Bellevue Hospital Medical College, New York, 1880; member of the Medical Society of New Jersey; aged 76; died, March 2, of carcinoma of the colon.

Thomas Clarence Dodds, Hartford City, Ind.; Eclectic Medical Institute, Cincinnati, 1898; for six years member of the board of education; aged 57; died, March 13, of coronary thrombosis.

Isaac N. Roberson, Nancy, Texas; Baylor University College of Medicine, Dallas, 1905; member of the State Medical Association of Texas; aged 67; died, January 1, of heart disease.

S. Merrill Tilson ♂ Indianapolis; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; aged 56; died, March 22, of acute myocarditis and renal colic.

John P. Aloysius McParlan ♂ New York; Bellevue Hospital Medical College, New York, 1891; on the staff of St. Francis Hospital; aged 65; died, March 19, of pneumonia.

Howard Ethan Whitney, Otsego, Mich.; Hahnemann Medical College and Hospital, Chicago, 1895; served during the World War; aged 59; died, March 11, of heart disease.

Elmer Henry King, New York; Medical School of Maine, Portland, 1913; on the staff of the New York City Cancer Institute Hospital; aged 54; died, March 15, of heart disease.

Robert Hooper Smith ♂ Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1924; aged 35; died, March 5, in the Union Memorial Hospital, of lobar pneumonia.

John George Rohrig ♂ Davenport, Iowa; State University of Iowa College of Medicine, Iowa City, 1909; aged 49; died, March 25, in the Mercy Hospital, of perforated gastric ulcer.

George Frederick Yates, Chicago; Rush Medical College, Chicago, 1888; aged 69; died, March 23, in the Wesley Memorial Hospital, of injuries received in an automobile accident.

Samuel N. Schneider, Evanston, Ill.; Chicago Homeopathic Medical College, 1880; member of the Illinois State Medical Society; aged 75; died, March 16, of myocarditis.

Earl Lee Overholt, Fostoria, Ohio; Rush Medical College, Chicago, 1898; member of the Ohio State Medical Association; aged 63; died, March 15, of angina pectoris.

Leon H. Mayo, Birmingham, Ala.; Medical Department of the University of Alabama, Mobile, 1906; aged 50; died, March 12, in the Hillman Hospital, of brain tumor.

George E. Muns, Montgomery City, Mo.; University of Missouri School of Medicine, Columbia, 1880; formerly postmaster; aged 76; died, March 17, of myocarditis.

Samuel Mason, Pennville, Ind.; Indiana Medical College, Indianapolis, 1873; Civil War veteran; formerly bank president; aged 88; died, March 16, of heart disease.

Henry Stuart Krug, St. Louis; Trinity Medical College, Toronto, Ont., Canada, 1895; aged 60; died, March 20, of cerebral hemorrhage, while visiting in Detroit.

Robert R. Teller, Miami, Fla.; Victoria University Medical Department, Coburg, Ont., Canada, 1881; aged 77; died, January 19, of chronic nephritis and uremia.

Stephen Johnson D. Meade, Fort Thomas, Ky.; Pulte Medical College, Cincinnati, 1885; aged 75; died, March 15, of cerebral hemorrhage and arteriosclerosis.

Jonas Risting Nannestad, Albert Lea, Minn.; University of Christiania, Norway, 1890; aged 68; died, March 12, of acute dilatation of the heart and influenza.

Mary Campbell McIntyre ♂ Kalamazoo, Mich.; University of Michigan Medical School, Ann Arbor, 1925; aged 40; died, March 13, of pulmonary tuberculosis.

Josiah J. Schrock, Greentown, Ind.; Medical Department of Western Reserve University, Cleveland, 1887; aged 77; died, March 10, in Gary, of pneumonia.

Robert Hall Moore, Trenton, N. J.; Kentucky School of Medicine, Louisville, 1894; aged 63; died, March 14, of coronary thrombosis and arteriosclerosis.

Horace Robert Hawkins, Xenia, Ohio; Homeopathic Hospital College, Cleveland, 1892; aged 60; was found dead in bed, March 15, of heart disease.

William Joseph Nesbit, Detroit; Western University Faculty of Medicine, London, Ont., Canada, 1913; aged 44; died in March, of heart disease.

Fred Goldfrank, Darien, Conn.; Columbia University College of Physicians and Surgeons, New York, 1903; aged 55; died, March 13, of heart disease.

Henry Everard Barr, New Wilmington, Pa.; Jefferson Medical College of Philadelphia, 1900; aged 60; died suddenly, March 12, of heart disease.

Elijah J. Post, Benton Harbor, Mich.; Hahnemann Medical College and Hospital, Chicago, 1891; aged 77; died, March 2, of cerebral hemorrhage.

James Henry Voris, Conway, Ark.; University of Arkansas School of Medicine, Little Rock, 1901; aged 55; died, February 7, of heart disease.

David W. Ogden, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1892; aged 72; died, March 9, of endocarditis.

Wilber Laurin Hutchison, Easton, Pa.; Jefferson Medical College of Philadelphia, 1923; aged 35; died, March 20, of a self-inflicted wound.

Otis B. Salley, Augusta, Ga.; University of Georgia Medical Department, Augusta, 1879; aged 77; died, March 2, of myocarditis and nephritis.

Cullen Bryant Maxson, Jersey City, N. J.; Cornell University Medical College, New York, 1904; aged 54; died, March 27, of pneumonia.

Nils Omsted, Stoughton, Wis.; University of Christiania, Norway, 1883; aged 73; died, February 28, in the Community Hospital, of pneumonia.

Charles J. Parris, Newcastle, Texas; Memphis (Tenn.) Hospital Medical College, 1909; aged 55; died, March 7, in a sanatorium at Olney.

Valorous A. Thomas, Nelson, Neb.; Jefferson Medical College of Philadelphia, 1897; aged 76; died, January 17, of cerebral hemorrhage.

Charles Edmund Scullin ♂ Peoria, Ill.; Rush Medical College, Chicago, 1903; aged 54; died suddenly, March 23, of angina pectoris.

George Newton Powell, Laketon, Texas; Missouri Medical College, St. Louis, 1883; aged 74; died, Dec. 9, 1932, of diabetic gangrene.

Nelson Holland Young, Canandaigua, N. Y.; Medical College of Ohio, Cincinnati, 1896; aged 58; died, January 10, of heart disease.

Thomas Henry Line, Grafton, Neb.; Rush Medical College, Chicago, 1881; aged 74; died, February 25, of cerebral hemorrhage.

Ephraim Lutz Shumaker, Louisville, Ill.; Miami Medical College, Cincinnati, 1881; aged 74; died, March 1, of cerebral hemorrhage.

James Edgar Townsley, Cincinnati; Columbus Medical College, 1889; aged 76; died, February 6, of cerebral hemorrhage.

Hans Rasmussen ♂ Milwaukee; Jefferson Medical College of Philadelphia, 1896; aged 65; died, March 15, of coronary thrombosis.

Harry Hayford Colburn ♂ Boston; Medical School of Maine, Portland, 1895; aged 61; died, March 12, of chronic nephritis.

Thomas Vaden Brooke, Sutherlin, Va.; Medical College of Virginia, Richmond, 1872; aged 88; died, March 12, of senility.

Daniel Iverson Dahl, Becker, Minn.; Fort Wayne (Ind.) College of Medicine, 1898; aged 68; died, March 14, of heart disease.

George P. Norton, Tampa, Fla.; Meharry Medical College, Nashville, Tenn., 1897; aged 67; died, February 8, of endocarditis.

Correspondence

USE OF CARBON DIOXIDE IN ANESTHESIA

To the Editor:—I am wondering whether your reply to a question as to the toxicity of carbon dioxide in Queries and Minor Notes (THE JOURNAL, February 18, p. 519) is entirely safe. In 1829, Hickman reported experiments in which he had put animals into a state of unconsciousness during which they were insensitive to surgical trauma, by exposure to the gas evolved when sulphuric acid was added to carbonate of lime. Paul Bert (La pression barométrique, Paris, 1878) wrote: "Small animals exposed to varying percentages of carbon dioxide in the presence of 'ample oxygen' do not die until concentrations of 30 per cent are reached." Haldane and Smith (The Physiological Effects of Air Vitiating by Respiration, *J. Path. & Bact.* 1:168, 1892) reported that human subjects exposed to 10 per cent carbon dioxide in the presence of ample oxygen "became stupefied." In his book on Respiration (1921), Haldane remarks that the quieting effect on respiration of excess concentrations of carbon dioxide probably led early observers to overlook the stimulation of breathing caused by lower concentrations. Loewy and Zuntz (Ueber die Bedeutung des Sauerstoffmangels und der Kohlensäure für die Innervation der Atmung, *Arch. f. Physiol.*, 1897, p. 379), working with animals, found maximum increase in pulmonary ventilation at 15 per cent carbon dioxide. When higher concentrations were used, breathing volume was reduced by the "onset of narcosis." Hill and Flack (The Effect of Excess of Carbon Dioxide and of Want of Oxygen upon the Respiration and the Circulation, *J. Physiol.* 37:77 [June 30] 1908) noted an increase in blood pressure, most marked with concentrations of from 10 to 25 per cent. When the inspired atmosphere exceeded 25 per cent concentration of carbon dioxide, circulatory depression was noted. They thought that in normal men the effect of increasing concentrations of carbon dioxide was stimulant to respiration until 10 per cent was reached, after which progressive depression of ventilation was developed. E. W. Brown (Value of High Oxygen in Preventing Physiological Effects of Noxious Concentrations of Carbon Dioxide, *U. S. Nav. M. Bull.* 28:523 [July] 1930) referred to much of the foregoing work and reported his experiments, with submarine personnel of the navy as subjects. He found among other things that a maximum stimulation of respiration was reached at 10.4 per cent carbon dioxide. The average maximum time which this concentration could be tolerated by healthy men without marked subjective symptoms was two and a quarter minutes. He noted individual variations in the reaction of different men under identical conditions. He checked the influence of excess oxygen concentration and found that it did not change his results. Finally he says, "It is not believed that any of the subjects could have withstood 10 per cent carbon dioxide for longer than ten minutes without losing consciousness."

Although the usefulness of carbon dioxide in clinical therapy is admitted by a host of writers, words of warning are scattered throughout the literature. J. Ross Mackenzie (Carbon Dioxide in Gas and Oxygen Anesthesia, *Brit. J. Anaesth.* 4:92 [Oct.] 1926) cites cases of carbon dioxide overdosage in anesthesia, as I also have (Waters, R. M.: Carbon Dioxide: Its Place in Anesthesia, *Canad. M. A. J.* 17:1510 [Dec.] 1927. Waters, R. M.; Wineland, A. J., and SeEVERS, M. H.: Carbon Dioxide and Oxygen Problems in Anesthesia, *Anesth. & Analg.* 10:10 [Jan.-Feb.] 1931). The latter emphasizes the fact that clinical patients may vary widely from the normal as to chemical balance and acid base equilibrium and may therefore in certain cases react very differently to increases in carbon dioxide tension in the inspired atmosphere as compared with normal individuals

or laboratory animals. Peiper and Cammann (Kohlensäure bei den Atemstörungen der Neugeborenen und Frühgeburten, *Monatschr. f. Kinderh.* 53:323 [June] 1932) recently reported graphic records of effects of carbon dioxide mixtures with oxygen, administered to premature infants. They found that the changes were not regular and noted in a number of cases "shock reactions" at the beginning of administration.

There is, then, quite general agreement that a concentration of more than 10 per cent carbon dioxide in the inspired atmosphere produces unconsciousness in normal animals and men. Much higher concentrations are required to produce respiratory depression in normal individuals. All investigators agree that circulation is markedly stimulated with slight increases in carbon dioxide, while depression of cardiac muscle may accompany higher concentrations. The lack of agreement as to the exact concentration for maximum stimulation, both of respiration and of circulation, may be due, as suggested by Brown, to the fact that subjects dislike to expose themselves to increased carbon dioxide tension for long periods.

From personal experience, I am convinced that the variation in reactions, noted by several workers, in different normal individuals under identical conditions is greatly exaggerated when one deals with people suffering from various disease states. Abnormalities in the physiologic balance of the respiratory center as well as of the chemistry of the body fluids may be factors causing such variations. In attempting to induce ether anesthesia by means of carbon dioxide-oxygen mixtures, several times I have suddenly found the patient precipitated into a marked respiratory depression or even arrest, without first having noted the usual hyperpnea to be expected under such circumstances. Such a depression or apnea may be accompanied by a grayish pallor indicative of marked circulatory depression as well. The class of cases in which these experiences occurred were those in which acid-base balance disturbances were common, although laboratory support of the presence of such abnormality previous to anesthesia was lacking. Afterward, chemical examination of the blood in one case showed definite severe decrease in carbon dioxide combining power. The ill advised use of carbon dioxide is illustrated by the following case: An infant was given an ether anesthesia accompanied by marked respiratory obstruction. Color was kept pink by a high tension of oxygen maintained in the atmosphere, which passed the obstruction with each respiratory effort. A carbon dioxide-oxygen mixture was foolishly administered on the release of the obstruction at the end of operation, without consideration being given to the already high blood carbon dioxide likely to be present accompanying respiratory obstruction. Both respiratory and circulatory depression were immediate and the baby died within a short time. I fully appreciate the possible damage which may occur from prolonged respiratory obstruction, yet I believe that the carbon dioxide added at the end of this anesthesia was no small factor in causing the death.

I believe that carbon dioxide is several times more toxic than ethylene or nitrous oxide. In view of this fact, I feel justified in questioning your statement that "carbon dioxide, when administered with ample oxygen during or after anesthesia, is entirely nontoxic." Your statement may be relatively true in normal individuals. However, patients come to the operating room in various stages of physiologic disturbance. The respiratory center may be overstimulated or it may be depressed. The acid-base balance may be deviated toward acidosis or toward alkalosis. The same conditions obtain in cases in which carbon dioxide therapy may be contemplated in the wards of the hospital. Indication for the use of carbon dioxide, it seems to me, should be the need for the production of a definite physiologic effect, which carbon dioxide is known to produce. Only careful clinical observation can determine the proper dose in a given case, either in concentration or length of time over which that

concentration should be inhaled. I believe that carbon dioxide is an extremely useful drug, but I also consider it a powerful as well as a seriously toxic agent when misused.

RALPH M. WATERS, M.D., Madison, Wis.
Associate Professor of Surgery
in Charge of Anesthesia.

A PHYLOGENETIC STUDY OF INSANITY

To the Editor:—It is so gravely important to increase our understanding of human nature in health and in disease that any effort in this direction should be commended. But a body of knowledge must be defended; and we must recognize that as much harm can be wrought by some proponents of psychiatry as by its antagonists. I refer specifically to Trigant Burrow's paper on "A Phylogenetic Study of Insanity in Its Underlying Pathology" in *THE JOURNAL*, March 4.

Dr. Burrow first tells us, in his definition of "phylopathology" and in the implications inherent in his choice of that term, that there is no such thing as a Man Alone; that Rousseau's "Natural Man" and the Noble Savage and Individualistic Psychology are based on romantic concepts. Undoubtedly Man is a social creature, as he is also a chemical congeries, a philosophic concept, an economic unit or a Son of God, depending on one's point of view. And it is probably a good thing that we be reminded that Man is a point in a phylum and must be so considered; that Man has physical, chemical, electrical and social relationships and must find his place in the dynamics of these relationships under penalty of physical or psychic disease. It is also undoubted that men communicate with one another in various fashions, such as talking, and that they frequently misunderstand one another in spite of the fact that they seem to be speaking the same language; for language is symbolic representation, but although the symbols are standard enough, they are by no means fixed, nor ever completely expressive of the entire meaning one wishes to convey. It is generally agreed, too, that the prefrontal cortex is not a mere sensory way-station, but that it has the practice of interpreting and distorting raw facts even to the point at which insanity is possible.

But it is just at these truisms that Dr. Burrow goes astray by remaining superficial. The interplay between a man's consciousness of himself and the realities that surround him is far too profound to be settled by the coining of terminology. Whoever advocates a new point of view in psychiatry must first answer, in the light of that point of view, How do we know anything? What is the basis for feeling that one thing is real and another thing is unreal? How much of this sensation that I happen to feel is due to an external stimulus and how much is it due to my sensory organs or to my state of mind? Why do we associate perceptions in certain ways? Why do we invest with emotion certain ideas or objects or words? Dr. Burrow has tacitly raised all these questions. Occasionally he recognizes the fact, as when he says "The patient falsely projects feelings and sensations whose only basis of reality is his own arbitrary, symbolic projection of them," which raises the question only to beg it. We are told about actions "which are presumably not false but which, being 'normal,' are held to be 'true,'" and the italics with which the author encloses "normal" and "true" are in no wise explained by the irrelevant footnote appended at that point. In the absence of definition of such basic concepts, Dr. Burrow's attempt to tell us how "false" was changed to "true" is necessarily futile. The single case cited by the author is equivalent to the thousands of cases treated by faith-healers, a false criterion scientifically if we are not told the conditions under which the cure took place; for if the patient was led from "false" to "true," then where did he start, what ground did he cover, and where did he end up? A case history cannot be given as proof of an hypothesis merely by being included in the same article with it. That case must

be interpenetrated with definition and generalization before it can serve as valid testimony; and Dr. Burrow has not conformed to this necessity.

Yet Dr. Burrow's paper is merely a single overt example of the case into which most American psychiatrists have fallen. Any one who attempts to talk about reality must be a cultured metaphysician. It is a pity that the abstruse reputation of metaphysics has frightened so many estimable minds. Perhaps the example of Freud, who formulated a metapsychology, will animate his followers to a like understanding; for what Freud achieved, in common with his predecessor metaphysicians, was an epistemology—a private scheme, a set of presumptions, to explain the apparently irrational processes that we call psychic. Freud's shortcomings are those common to all pioneers. But it is along the lines he indicated in his metapsychology that his contribution took real scientific root; and it is on this basis that his work will be modified and advanced.

E. EDWARD HARKAVY, M.D., New York.

STAPHYLOCOCCI AND BACTERIOPHAGY

To the Editor:—In *THE JOURNAL*, April 1, page 1014, appears an article by Felix d'Herelle and M. L. Rakietyen relative to the susceptibility of hemolytic staphylococci to bacteriophage in which the authors come to the general conclusion that, "hemolytic staphylococci are particularly susceptible to bacteriophage." The authors in their paper present evidence in the work of Epstein and Feigin, McKinley and Cámara and their own which shows that at least thirty-nine strains of hemolytic staphylococci have been studied which are resistant to bacteriophage. While there may be a "tendency" for the hemolytic type of the staphylococcus to be susceptible to the action of bacteriophage, it is somewhat misleading to generalize on this point. This is particularly so because of the clinical implications involved and because of the fact that several of the biological houses are now placing preparations of bacteriophage on the market. Certainly the physician will wish to know if the particular staphylococcus infection he is dealing with in his patient is susceptible to the bacteriophage which is supplied him, for otherwise such supposed specific treatment would lack any scientific basis. It was because of this consideration that we were prompted to publish a note on the seven strains of staphylococcus (hemolytic) which were found to resist the action of a supposed polyvalent staphylococcus bacteriophage.

EARL B. MCKINLEY, M.D., Washington, D. C.

ERYTHROCYTE SEDIMENTATION RATE IN DISEASE

To the Editor:—In an editorial in *THE JOURNAL*, March 11, entitled "The Erythrocyte Sedimentation Rate in Disease," it is stated that, in spite of many studies, the theory behind variations in the sedimentation rate remains clouded. There is, however, a general agreement among many observers, e. g., Fåhræus (*Physiol. Rev.* 9:241 [April] 1929), Starlinger (*Biochem. Ztschr.* 114:129, 1921), Westergren (*Ztschr. f. d. ges. exper. Med.* 75:668, 1931) and Gram (*Arch. Int. Med.* 28:312 [Sept.] 1921), that an increase in the sedimentation rate is chiefly due to an increase in the fibrinogen or globulins of the blood. Although other factors also play a rôle, such as hydermia, anemia, erythrocytosis and color index (Rourke and Plass: *J. Clin. Investigation* 7:365 (Aug.) 1929. Rourke and Ernestine, *ibid.* 8:545 [June] 1930. Bendien and Snapper: *Biochem. Ztschr.* 235:14, 1931. Ohno: *Ztschr. f. d. ges. exper. Med.* 52:643, 1926, and others) changes in plasma proteins appear to play the greatest rôle. The sedimentation rate is increased when the viscosity of the plasma is raised by increase of the fibrinogen or the globulins, or when the number

of erythrocytes is reduced. The rate is decreased when the plasma is diluted or when the red cells are increased in number. The changes in sedimentation rate can readily be demonstrated in vitro by altering the viscosity of plasma with acacia or with physiologic solution of sodium chloride. The ultimate cause of the increase or decrease of fibrinogen and globulin is at present being actively investigated and appears to some to be related to the disintegration of cellular elements (as suggested by Hofmeister and others) brought about by infection, injection of foreign proteins or poisons and in certain diseases of the blood-forming organs. The theories in regard to the causes of variations in the sedimentation rate are therefore not as clouded as one might be led to believe by the editorial.

H. A. REIMANN, M.D., Minneapolis.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

USE OF OBSTETRIC FORCEPS

To the Editor:—With all the emphasis on correct cephalic application of forceps in obstetric literature, I find no reference to the difficulty (and in my own experience, the impossibility) of an exact application in cases of extreme molding of the skull. When the mento-occipital diameter is 14 or 15 cm., the biparietal 9 cm., and the head well flexed and impacted in a small pelvis or held very firmly by the soft parts, I find that the forceps will not fit along the sides of the head. I diagnose with the whole hand in the vagina, insert the posterior blade in the correct position, and then attempt to bring the wandering blade opposite it. Sometimes the wandering blade will not pass beyond an oblique position. Sometimes I can bring it into correct relation with the first blade, but when I lock the forceps they slip into the oblique position. On extraction I find that the second blade was applied so that its tip just overlapped the outer angle of the frontal ridge. On account of the extreme molding, the blade was not long enough to reach the malar prominence. This molding also alters the curve of the side of the head, so that the cephalic curve of the forceps is too short and deep to adapt itself to that curve. Experiments on the head after delivery demonstrate that the oblique frontomastoid application was the only one possible. I have not found that it requires any more force to deliver in these cases, or that there is any adverse effect in increasing fetal mortality. I should like to ask what the experience of other obstetricians is in this question. Is there any literature on the subject? Recognizing that my own experience is too limited to justify conclusions as to the relative safety of extraction with an oblique frontomastoid application, I should like to find statistics on it. I wish especially to ask how to overcome the difficulty of correct application of the wandering blade to the markedly elongated head, when the posterior ear is barely past the superior straight while the caput is at the perineum.

MARIAN E. MANLY, M.D., Chengtu, Szechuan, West China.

ANSWER.—Prophylactically, it is wise to interfere before a woman has labored long enough to produce the extreme molding of the fetal head described in the query. In the cases in which earlier intervention would result in injury to mother or child, delivery is difficult. Generally the head presents as an occiput posterior or occiput transverse and the latter most likely occurred in the case cited, although this is not specified. Diagnosis by means of the position of the sutures and the fontanels is usually impossible because of the edema present on the head. Hence the only safe way is to insert most of the hand into the vagina and attempt to feel an ear. The posterior ear is the one usually sought, but with experience one can learn to outline the anterior ear. This has the advantage that the fingers need not be inserted as high up into the pelvic canal as when feeling for the posterior ear, and there is less need of displacing the head with the possibility of prolapse of the cord. In all cases of occiput posterior it is advisable to attempt to rotate the occiput with the hand to an anterior position or at least to a transverse position. The general teaching concerning the application of the forceps blades is to insert the left one first and then the right one. This is advisable for all cases of occiput anterior and also for cases of transverse positions, especially left occiput transverse. When the blades are thus inserted, it is easy to lock them. However, in some cases of right occiput posterior in which the occiput cannot be rotated manually to an anterior position but only to a transverse position, it is frequently best to insert the right blade first as was done in this case. Since this is the posterior blade, it will require some manipulation of the left or anterior blade to make it lock properly with the right one, because the

left blade should fall under the right one and not above it, as occurs when the right blade is inserted first.

When the head cannot be rotated from the transverse diameter, the best way is to apply the forceps obliquely as follows (for right occiput transverse): Since the front of the forceps must face the occiput, the blades should be inserted so that they lie in the right oblique diameter of the pelvis. The left blade is inserted anteriorly behind the left iliopectic tubercle so that it lies over the left anterior malar bone, and then the right blade is inserted posteriorly opposite the right sacro-iliac joint so that it lies over the right posterior parietal bone. The first or left blade is the one that must be made to wander into place by being turned around the side of the pelvis over the child's face. Locking in cases of oblique application is not easy because the parietomalar diameter is larger than the biparietal. Therefore, the handles should not be compressed too much. The statement is made that "sometimes the wandering blade will not pass beyond one oblique position." When the occiput is anterior, there is no necessity of making a blade wander into place. When the occiput is transverse, it is extremely difficult with the usual Simpson forceps to make the wandering blade rotate sufficiently to make a perfect biparietal application; hence the wandering blade and its mate must usually be applied in an oblique diameter. However, such special forceps as the Barton or Kielland permit an exact biparietal application with the head in the transverse diameter.

Frontomastoid application may result in injury to an eye or to a facial nerve. It is better to attempt a parietomalar application whenever possible. When the molding is so extreme that this is impossible, one simply must apply the blades in the best possible manner and extract the child with great care. Since in these cases the bag of waters has long been ruptured, it is usually hazardous to perform a version and extraction.

CULTURE OF SCARLET FEVER STREPTOCOCCI

To the Editor:—Recently in a case of clinically typical scarlet fever, cultures on Loeffler's blood serum medium and plain agar slants, and smears made on the day of onset yielded a gram-positive capsulated diplococcus and staphylococci. No streptococci were found on the original smear or on the cultures at the end of twenty-four and forty-eight hours. Smears and cultures made on the second day of illness, when the eruption appeared, showed only staphylococci. The cultures presented at twenty-four and forty-eight hours a vigorous growth of *Staphylococcus aureus* and *Staphylococcus albus*. My bacteriology being rather primitive, I do not know what conclusion to reach. Is the absence of streptococci on smears and cultures, carefully made, reasonable proof that the disease was not scarlet fever, or were my mediums unsuitable for the growth of the streptococci of scarlet fever? In similar cases in the past, in which the tonsils presented small yellow patches of membrane, I have found an apparently identical gram-positive capsulated diplococcus which on culture developed into short chains. In none of these cases, however, did I observe a rash such as the one in the present case. This time the diplococci, which were present in large numbers and almost unmixed with other bacteria, on the first smear failed to develop into chains and the patient on the second day produced a very florid scarlatiniform rash. I would greatly appreciate your opinion. Please omit name.

M.D., Indiana.

ANSWER.—Cultures on Loeffler's blood serum medium and on plain agar slants are not adequate to determine the presence of scarlet fever streptococci; nor are direct smears. Cultures should be made from the nose and from the throat on blood agar plates. These plates are incubated over night and examined the next day for the presence of hemolytic streptococci. If the case is one of surgical or puerperal scarlet fever, cultures should be made from the surgical lesion or from the cervix.

TREATMENT OF CYSTITIS

To the Editor:—I have as a patient a man with a severe alkaline cystitis. He had neglected a condition for which the prostate was removed and healed nicely. Daily irrigations with boric acid or potassium permanganate solution (1:8,000) for two months were followed by mercuriochrome, 2 per cent, or silver nitrate solution (10 cc. of 1:500) or 0.25 per cent phosphoric acid. By mouth he has had as much as 60 grains (4 Gm.) of acid sodium phosphate three times a day with 20 grains (1.3 Gm.) of methenamine. Pyridium also has been tried. Neosarsphenamine has been administered intravenously. The urine is better but still filled with pus and is alkaline. What else would you suggest? What is the maximum dose of acid sodium phosphate?

MERVIN T. SVOLER, M.D., Lawrence, Kan.

ANSWER.—In an instance of an old stubborn cystitis, irrigations are not of any pronounced therapeutic efficacy. Flushing of the viscus serves only the temporary cleansing of the bladder wall, which manipulation should be followed by the instillation of about 2 cc. of a more concentrated solution of some silver salt. Acidifying of the urine is best accomplished by the oral administration of diluted hydrochloric acid, ten drops in a glass of water three times a day. At any rate, cystoscopic examina-

tion of the bladder is necessary in order to determine whether there is any obstruction at the vesical neck and whether there are present irregular granulations or ulcerations at the prostatic bed, which if found have to be treated by electrocoagulation. After the bladder is once cleared up to a satisfactory degree, ureteral catheterization will be indicated in order to determine whether or not pyelitis is present, which if found has to be treated by pelvic lavage. If, however, as so frequently is the case in infiltrating cystitis, the treatment mentioned fails, only cystostomy and prolonged drainage will furnish definite relief. The quantity of acid sodium phosphate as mentioned represents about the normal dose.

THYROID EXTRACT IN COLD SENSITIVITY

To the Editor:—In THE JOURNAL, January 7, in the Current Medical Literature department, is an abstract of an article from the *Annales de médecine*, entitled "Urticaria from Cold," by Weissenbach and Brisset. They state that all therapeutic measures used were without results. I was greatly troubled last winter with urticaria from cold. I spoke to a skin specialist about it, and he had no remedy to offer but told me he knew of another physician who had the same trouble. Last fall I began taking thyroid extract on the advice of my physician for another condition. I noticed as the cold weather came on that I was not troubled with urticaria when my hands, feet and knees became cold. I forgot to take the thyroid for several days and the trouble promptly returned. It disappeared again, however, as soon as the thyroid tablets were resumed. I had a patient recently, a young woman, who complained that she had to wrap her knees in shawls to keep warm in bed. I gave her thyroid extract, and she ceased to be troubled with the cold. I am suggesting this remedy for further treatment of these cases. The dose that I took was 1 grain (0.065 Gm.) a day. A. T. BLACHLY, M.D., Portland, Ore.

ANSWER.—The use of thyroid extract in trouble of this sort is not unknown. Metabolic tests in cases of heat and cold sensitivity give variable results in different patients and in the same patient at different times.

The feature most impressive in heat and cold cases, so far as metabolism is concerned, is its instability. In one case of urticaria caused by cold described by Duke on four different days the metabolism was —60 or thereabouts. He gave a small dose of B. coli vaccine for the purpose of inducing fever, with the result that the metabolism rose immediately to normal and the urticaria disappeared. This was reported in the *Archives of Internal Medicine* many years ago in a paper entitled "Heat and Effort Sensitiveness and Cold Sensitiveness."

TREATMENT OF MENORRHAGIA DUE TO ABNORMAL PITUITARY FUNCTION

To the Editor:—A girl, 5 feet 10 inches (178 cm.) in height, 16 years of age, had normal menstruation until two years ago and since then has had prolonged bleeding. During the past year she has been free from bleeding for only three months. The heart, kidneys and lungs are normal. The blood picture is normal, excepting secondary anemia (caused by this continuous menstruation). Just now she is in her eighth week of menstruation again, four napkins each day. Her condition is poor. At first Cistomensia and Hyptocin seemed to help. I had the spleen irradiated six months ago. It seemed to help, because the bleeding stopped a few days later. I am baying another irradiation done, with negative results. The examinations of the pelvic parts have not revealed any abnormality. What else do you suggest? Does scraping help in these cases? What about heavy x-raying of the ovaries?

R. BURTON-OPITZ, M.D., Palisade, N. J.

ANSWER.—There is undoubtedly a disturbance in one or more glands of internal secretion in this case, as evidenced by the fact that the girl is so tall for her age and also because of the persistent uterine bleeding. The gland that is most likely responsible for both the excessive height and the menstrual irregularity is the pituitary. A curettement should first of all be done for two reasons. It will almost certainly produce a temporary cessation of bleeding and it will permit a diagnosis of the type of endometrium present in the uterus. In the case cited, the endometrium will most likely present the condition known as endometrial hyperplasia, which is characterized by a "swiss-cheese" pattern. In such cases the ovaries show a persistence of the unruptured graafian follicles and an absence of corpora lutea. This indicates that there is a disturbance of ovarian secretion which consists of a persistence and excess of the follicular hormone (folliculin or theelin) and an absence of the corpus luteum hormone (progesterin). The cause of the abnormalities in both the uterus and the ovaries is probably a disturbance in the anterior lobe of the pituitary gland. If an active preparation of corpus luteum hormone were available for clinical use, it would most likely be possible by its repeated use to bring about a rhythmic cycle in the uterine endometrium and therefore a cessation of the persistent bleeding. Thus far no such preparation has become available and, even if there were one, injection of this substance would have to be repeated each month because it apparently has no effect on the ovaries. The changes in the ovaries are not the basic cause for the

intractable uterine bleeding. The fault lies in a disturbance of the anterior lobe of the pituitary gland, which is responsible for the persistent graafian follicles, and these in turn lead to the abnormal uterine bleeding. Therefore, the administration of the luteinizing hormone of the anterior pituitary gland should bring about a conversion of the granulosa cells of the ovary into lutein cells and a cessation of the irregular bleeding. This substance may be obtained from the urine of pregnant women. Novak and Hurd (*Am. J. Obst. & Gynec.* 22:501 [Nov.] 1931) report excellent results with this form of therapy in fifty-one cases of functional uterine bleeding. These authors arbitrarily administered 200 rat units intramuscularly every day, and in all but seven cases the bleeding was checked in a short time. With this form of therapy, roentgen treatment is unnecessary; but sometimes irradiation of the pituitary gland, as suggested by Hofbauer, is efficacious. Neither x-rays nor radium should be applied to the ovaries in a 16 year old girl until all other measures have been given a thorough trial.

DELAYED SENSITIZATION AFTER BURN

To the Editor:—A woman, aged 20, received a first and second degree burn on the forearm by flames spurring out of a furnace door. The whole forearm was red and an area of about two square inches blistered. I applied a butesin picrate dressing. Next day I applied the butesin picrate over the blistered area and petrolatum elsewhere. On the third day and thereafter a plain petrolatum dressing was applied. All went well for a week, when an itchy papular eruption began to appear over the burned area. This became edematous and itching. I attributed it to a hypersensitivity to the butesin picrate, as the rash roughly corresponded to the area over which the ointment had been applied. Calamine lotion was applied with the expectation that shortly the process would subside. Rather than subsiding, the eruption has become worse and has spread to the upper arm and to the fingers and also to the other arm. I am under the impression that a toxic eruption arising from local application would be confined to the area of application and would not, as in the case of a plant dermatitis, be likely to spread to other areas. Is it not likely also that an eruption caused by an applied chemical would appear soon after application rather than a week from the time it was first applied? The length of the application in this case was not great. Would one expect a severe dermatitis from such short contact? Is it possible that the hypersensitive condition of the skin over the burned area would allow a plant or animal dermatitis to develop, whereas it would not develop on contact with normal skin? The patient lives on a farm, where such contacts would be possible. Finally, aside from soothing lotions and rest, is there anything further you would advise in treatment? Please omit name.

M.D., Michigan.

ANSWER.—It is of course possible that an infection occurred in the burned area. This often occurs; but the absence of vesicles from the eruption described speaks against this theory, for impetigo and ringworm infections, when acute enough to spread so rapidly, are usually vesicular. Absorption of sufficient picrate from so short an application is possible. The interval of quiescence was that necessary for sensitization to occur. Spread beyond the area to which the drug was applied is also a common phenomenon. The case is probably one of delayed sensitization. The treatment is appropriate, except that alkaline internal medication might be added.

NEW FORMULA FOR PEPSODENT ANTISEPTIC

To the Editor:—Some time ago you published a formula for Pepsodent Antiseptic. Is the same formula still in use? M.D.

ANSWER.—The A. M. A. Chemical Laboratory states that it has not examined Pepsodent Antiseptic. The formula given about two years ago, which was reproduced in THE JOURNAL, April 18, 1931, page 1332, was:

Chlorthymol	0.2000%
Benzoic acid	0.2000%
Boric acid	10.0000%
Citric acid	0.1000%
Tartaric acid	0.1000%
Flavor	0.1471%
Color	0.0080%
Glycerin	10.0000%
Alcohol	25.0000%
Water	54.2449%

Recent advertising material received from the Pepsodent Company shows that there has been some change in the formula, as witness the following:

Chlor-thymol .....	.0700%
Benzoic Acid .....	.2000%
Tartaric Acid .....	.1000%
Citric Acid .....	.1000%
Boric Acid	1.0000%
Flavor .....	.0687%
Color .....	.0015%
Solvents	98.4598%

Evidently the amount of chlorthymol and boric acid has been decreased. The composition or relative proportions of the "solvents" is not given in the later formula. The product, of course, is sold under vastly unwarranted and exaggerated claims.

TREATMENT OF URTICARIA

To the Editor:—I have at present three cases of generalized urticaria, persisting from day to day—all of them having a duration of over nine months—one of them nine years. Physical examinations are negative. One patient is obese but has a normal basal metabolism. Two of them are negative to skin tests; the other has such a marked dermatographia that a control skin scratch causes an area of redness 2 or 3 inches in diameter and makes the interpretation of the tests unreliable. All of them have been on elimination diets for months. I would be appreciative of any therapeutic suggestions. Cod liver oil and yeast have had some publicity recently in the treatment of hay fever: Is this substantiated in the other allergic conditions? Is the ultraviolet ray beneficial at all.

R. W. MERKLE, M.D., Alton, Ill.

ANSWER.—In the consideration of generalized urticaria that has proved resistant to treatment, it might be well to take stock. Has every possible etiologic factor been considered and has it been ruled out as completely as possible? Urticaria is usually due to foods, and this factor has been attended to here by elimination diets without success; therefore foods are probably not responsible in these three patients. Attention should therefore be placed on other possible causes, such as drugs, cosmetics, epidermals, foci of infection, and, of course, nervous elements, which cannot be omitted from consideration as they are frequently the result of urticaria as well as sometimes a precipitating factor. The drug situation should be carefully checked; coal-tar derivatives, such as acetylsalicylic acid, amidopyrine and acetphenetidin, are frequent causes of urticaria. Likewise cathartics, such, for instance, as contain phenolphthalein, may be responsible. Quinine, opiates and others may play a part. Cosmetics may be important; the patients should not be permitted to use any for a trial period, say two weeks. Contact with epidermals may cause urticaria—a horsehair mattress, a feather pillow or actual contact with animals. Foci of infection, particularly in the gallbladder, may cause trouble. Patients have been relieved by the removal of infected gallbladders. Any nervous tendencies should be relieved as far as possible.

If all these methods of search fail, there is left nonspecific therapy, a host of varied methods of treatment, used with success here and there but failing frequently. Among these may be mentioned the giving of about 0.3 to 0.5 Gm. of Witte's peptone in capsules about one hour before meals; the use of cathartics, with or without the addition of bile salts, presumably to aid the action of the liver and bile tracts in digesting proteins; autohemotherapy—the removal of from 10 to 20 cc. of blood from a vein of the patient, followed quickly by the injection intramuscularly of this blood into the same patient; also heteroautohemotherapy—the injection intramuscularly of blood from another person. The administration of ephedrine seems to be of help in some cases. The giving of calcium may be of service. Vaccine therapy has benefited a few. Change of residence or of climate is sometimes successful.

The supposed beneficial action of cod liver oil, ultraviolet rays and yeast in the treatment of hay fever has not been proved at all; the use of these in urticaria has not to date been satisfactory.

PAINFUL INTERCOURSE AFTER PROSTATITIS

To the Editor:—A man, aged 30, has had sexual intercourse for the past thirteen years one or two times a week, excepting a period from October, 1928, to April, 1929. During this time he had gonorrhea accompanied by a posterior urethritis and a prostatitis. The latter confined him to bed for two days because of fever, pain, frequency and dysuria. The prostate at this time was enlarged and painful. This condition gradually subsided. After recovery from the infection, he resumed intercourse one or two times a week. During the past two years he has noticed that there is not the same pleasure as formerly and he is able to complete the sexual act but once a week and never more than one time, where formerly it was at least two. Although he can obtain an erection, he does not experience an ejaculation on the second attempt. Occasionally after intercourse he experiences pain referred to the perineum, but this is not often. After the prostatitis, he had no massages. Physical examination now reveals no abnormalities excepting two or three shotty-like masses along the floor of the anterior urethra, infected and distended glands of Littre, which developed during the acute gonorrhea. There is no stricture, as sounds up to 20 F. can be passed with ease. The meatus will not admit a larger sound. Prostatic smear reveals one or two pus cells per high power field but not to every field. No gonococci have been found. The gonorrheal discharge has never returned even after alcoholic excess. On one occasion, after intercourse, slight frequency and slight dysuria developed on the second morning after. Examination then revealed pus in the urine. This cleared up in two days on alkalis. 1. The patient is desirous of knowing whether intercourse will again become pleasurable. 2. Would it be safe for him to marry? 3. Should the glands of Littre be treated or left alone? 4. Would prostatic massage benefit this patient since there are so few pus cells present? I would appreciate your opinion on this. Please omit name and address.

M.D., West Virginia.

ANSWER.—1. With proper treatment, a person at his age ought to be able to experience pleasure and perform the act of intercourse just like any normal person. There is undoubtedly

present a congestion of the prostate and prostatic urethra to account for the symptoms. He should receive, every five days, gentle massage of the prostate and instillations of weak (from 1:3,000 to 1:500) silver nitrate solutions with the Bangs sound syringe. The object of the massage is not to get rid of the few pus cells present but to relieve the congestion just like massage anywhere else in the body.

2. As regards marriage after an attack of gonorrhea, at weekly intervals, and in the absence of any treatment, the patient should have a microscopic examination made of any discharge at the meatus as well as of the expressed prostatic-urethral fluid obtained by massage after the patient has not urinated for several hours. These examinations are made for gonococci until there are three negative reports. In another week after the last slide specimen, early in the morning before he has passed any urine, a culture should be made of the same expressed fluid as well as of the centrifuged urine passed after the massage. If this is negative, in another week a few drops of 5 per cent silver nitrate solution should be injected into the anterior and posterior urethras and another culture should be made about thirty-six hours after the injection. If this is negative, a gonorrhea complement fixation test should be made. If this is also negative, a subcutaneous injection of gonococcus vaccine should be given and a final culture made in forty-eight hours. If this final culture is negative, the patient can be safely pronounced free from infection. It is important, however, to have all these pathologic examinations made by an expert pathologist.

3. The glands of Littre may be left alone unless some of the specimens show the presence of gonococci in the anterior urethra.

4. This question has been answered in the discussion of the first question.

EXHAUSTION OF SENSE OF SMELL

To the Editor:—I have an unusual request to make. One of my patients is a perfumer in a large concern. After he has worked for an hour or two his sense organs are either so saturated or so exhausted that it is hard for him to get the minute differences in odors which he must detect. I have suggested to him that he might occasionally irrigate his nose with physiologic solution of sodium chloride but I do not care to have him do this too frequently. Has this condition been called to your attention or has anything been written on it up to the present time? If so, will you tell me where such literature can be found, or will you suggest something that will be helpful in this condition?

CARL C. COWIN, M.D., Los Angeles.

ANSWER.—The phenomenon described is a common observation. Many odors, such as perfumes of flowers, quickly cease to give noticeable sensation when the stimulation is continued. It is not known whether this failure means fatigue of the sensory cells in the nasal membrane or central fatigue in the brain. The practical course for the person in question would be to arrange the testing in such a way that, except for the moment of inhaling the odors for the making of judgment, he should breathe air uncontaminated with the perfume. If this is not feasible, he might retire from the testing room at short intervals and thus, by breathing air free from the perfume, permit the fatigue to disappear and normal sensitiveness to be restored. There is no evidence that irrigation of the nasal mucous membrane with physiologic solution of sodium chloride will hasten recovery from local peripheral fatigue. If the phenomenon is due to peripheral fatigue during such irrigation there would be diminution of the stimulus of the perfume factor, but this can be accomplished more easily, and with less chance of infection, by breathing air free from the perfume for brief periods. At least this will be worth trying out and the results of the experiment would be worthy of note.

INTRAVENOUS INJECTIONS IN INFANCY

To the Editor:—Please give the technic for giving intravenous injections to infants. Please omit name.

M.D., Texas.

ANSWER.—The technic for giving intravenous injections to infants is essentially the same as for adults. The chief difference is in the choice of veins used.

When the anterior fontanel is open, it offers the easiest site for injection into the superior longitudinal sinus; but it is not without danger and should be used only by one experienced in the procedure or when the other veins cannot be used. The "Goldbloom" needle or short sinus needle made for intrasinus work should be used. The apex of the posterior angle of the anterior fontanel is located with the index finger of the right hand. The needle is inserted here, pointed backward at an angle of about 50 degrees to a depth of from 4 to 8 mm. The obturator is removed, and if removal is followed by a flow of blood, the sinus has been entered. Once the sinus is entered, the connector on the rubber tubing should be inserted into the

base of the needle while the fluid is flowing. This expedient prevents the injection of air into the vein. At least ten minutes should elapse while from 150 to 200 cc. of fluid is being given. When the required amount of fluid has flowed into the sinus, the needle should be withdrawn quickly, the patient should be made to sit up a little, well supported, and firm pressure should be made over the puncture wound with a gauze sponge. Then a piece of adhesive tape (whose gum surface has been heated) is applied. This tape should be removed in from ten to twenty-four hours, to avoid irritation or infection.

The external jugular offers a safe and accessible site for intravenous injection in infants. That portion of the vein between the sternomastoid muscle and the clavicle is fairly accessible except in very fat infants. The procedure here is to lay the patient on its side on the table, have an assistant support the head, and pull the upper shoulder downward, thus throwing the posterior triangle of the neck into prominence. The usual antiseptic preparations are made and the most prominent position of this vein posterior to the sternomastoid muscle is chosen; a little pressure above the clavicle may make the vein more visible. The needle should be inserted almost parallel with the course of the vein and should point toward the clavicle. The appearance of blood at the base of the needle marks successful entry.

At the bend of the elbow the procedure is the same as in adults, but in applying the tourniquet care must be taken not to use too great pressure, as this will interfere with the arterial flow and as a result a collapsed vein may render the operation impossible. This is a common error in intravenous therapy in using elbow veins. Sometimes the head veins are large and can easily be used; occasionally the dorsalis pedis vein on the dorsum of the ankle is accessible.

About one fiftieth of the body weight is usually given and never more than one sixteenth. About 10 cc. per pound of body weight is the average amount. The fluid should be given preferably by gravity and kept warm, from ten to twenty minutes being taken to give about 150 to 200 cc.

The usual antiseptic technic is important, and proper facilities, as the table, good light, assistants, special needles and equipment, are necessary to make intravenous injection in infants. If this is done, the giving of fluids to infants may be done quite readily with little trouble.

TOXIC GOITER

To the Editor:—I have been puzzled recently by three cases presenting the clinical signs of toxic goiter (tremor, loss of weight, nervous irritability, spastic constipation or diarrhea, and so on), but with no enlargement of the thyroid and with a low basal rate, from minus 9 to minus 14. What can I do for these people, and where can I get some information concerning such cases, without having to wade through pounds of literature? Your help will be appreciated.

L. K. STRATE, M.D., San Francisco.

ANSWER.—With definite evidence of thyrotoxicosis such as described, in spite of no visible enlargement of the thyroid and no increase in the basal metabolic rate, the patient should be treated with a high calory diet and a course of compound solution of iodine. If the effect is favorable—that is, if there is lessened irritability and nervousness, with increase in weight and strength—medical management can be continued with iodides or bromides. The age of the patient, the general condition, and failure to respond, should determine the advisability of surgery. A substernal enlargement should be ruled out. Innumerable references might be given, but the article entitled "Masked Hyperthyroidism," by W. W. Hamburger and M. W. Lev (*THE JOURNAL*, June 28, 1930, p. 2050) is an excellent study.

COMPARISON OF PREPARATIONS OF LIVER EXTRACT

To the Editor:—In *THE JOURNAL*, January 7, on advertising page 4, there is an advertisement from Chappel Laboratories offering oral and subcutaneous liver extract. I should like to know whether subcutaneous injections are as potent and effective as intramuscular treatment. I have in mind a patient who lives about seven miles from my office, on a road that is often closed to cars in the winter time, who has been kept in good health on a dose of 2 cc. of P. D. & Co. liver extract intramuscularly once a week. I feel that if the subcutaneous method was as satisfactory I could save this patient trouble and money (which in this case is important) by letting him have a syringe and do his injections himself. Kindly omit name and address.

M.D., Wisconsin.

ANSWER.—A difference of opinion still exists as to whether the subcutaneous injection of liver extract is as effective as the intramuscular. It is not fully established whether horse liver is more effective than liver obtained from other sources. The one essential is that the patient must be given an adequate amount of liver, whether the method of administration is oral

or parenteral—an amount sufficient to maintain the erythrocyte count above five million cells per cubic millimeter. Parenteral administration is much more effective than oral. Patients vary greatly, however, in the amount of liver required for adequate maintenance. Chappel's extract for subcutaneous administration is said to contain in one 2.5 cc. ampule the antianemic potency of 25 Gm. of raw liver; the Parke-Davis extract similarly is said to contain in one 2 cc. ampule the antianemic potency of 10 Gm. of liver; the Lilly extract, in one 10 cc. ampule that of 50 Gm. of liver; the Lederle extract, in one 3 cc. ampule the antianemic potency of 65 Gm. of liver. The amount of extract necessary for the maintenance of the patient can be ascertained only by observation. Ordinarily the red blood count may be maintained above five million cells per cubic millimeter by the parenteral administration of the active principle derived from 100 Gm. of liver at intervals varying from one to four weeks or by the weekly injection of the active principle derived from 25 to 100 Gm. of liver. Smaller doses often produce apparent good health but usually do not maintain the blood count at the desired high level.

CONTROL AND DIAGNOSIS OF NARCOTIC ADDICTION

To the Editor:—I have a friend whose wife, who is about 30 years of age, has had several operations, each accompanied with a great deal of pain, for osteomyelitis, from about 1922 to 1930. During this time the patient was given narcotics, particularly codeine by mouth, for relief of the pain and at times, no doubt, was given more than was necessary. During the last two years she has had no signs of osteomyelitis or other sickness but her husband suspects that she is still using some habit forming drug and fears that it may be codeine. He has been unable to find any drugs or syringes and is sure that she is not using a syringe. He says that she has been more irritable and nervous during the last year or so, and he is unable to convince himself that she is not using it. Can you give me any suggestions as to signs or symptoms by which he might be able to determine whether she is using a drug? Please omit name and address.

M.D., North Dakota.

ANSWER.—There are no pathognomonic symptoms of narcotic addiction in its early stages or when only a moderate quantity is used regularly. Many morphine addicts have successfully concealed their habit for years when less than 2 grains (0.13 Gm.) is used daily, and with opium and its derivatives codeine and pantopon larger amounts can be used without detection. The rapidity with which the symptoms develop varies with the tolerance of the individual and the amount ingested; some require only a few months and others several years.

Narcotic addiction may be recognized by the varying emotional attitude, periods of mental freshness and unusual energy alternating with great weariness, dejection, irritability and stupidity; in the more advanced cases, by the loss of sexual power, anorexia, miosis, pallor and general muscular weakness.

The surest means of diagnosis is seclusion with absolute surveillance for a week under the care of a physician who understands narcotic addiction.

INDUSTRIAL HAZARDS IN MANUFACTURE OF RADIO TUBES

To the Editor:—Will you kindly inform me whether any one has described a disease, or diseases, associated with the manufacturing of radio tubes? If so, kindly describe the disease and give me references.

MAURICE KLEINMAN, M.D., Newark, N. J.

ANSWER.—No occupational diseases peculiar to radio tube makers are known. On this account, no references can be cited. Through similarity of materials and operations in this industry to others in which experience is longer, justification exists for the assertion that a number of hazards may be found in radio tube manufacture. Molded bakelite or a similar plastic substance may form the base of the tube. Workers in these products are liable to develop acute skin diseases (occupational dermatitis). Certain of the wires used in the tubes are metal plated. The usual hazards of metal plating thus arise.

In some types of tubes, it is customary to etch metal parts, through sandblasting. This introduces the possibility of silicosis.

The silvering of tubes may lead to mercury poisoning. Infrequently, arsenic is introduced into the tube in connection with efforts to reduce air and other gases in the tube. The metals used in filament making should be treated with respect, although it is observed that no cases, or at least few cases, of poisoning are known. Of the minerals in wide use (tungsten, thorium, platinum, iridium, molybdenum), thorium should be handled with caution, until future inquiry establishes that its radioactive properties are without dangerous possibilities for mankind.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Milwaukee, June 12. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The general oral, clinical and pathological examination will be held in Milwaukee, June 13. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Milwaukee, June 12. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARKANSAS: Basic Science. Little Rock, May 1. Sec., Mr. Louis E. Gebauer, 1002 Donohuey Bldg., Little Rock. Regular. Little Rock, May 9-10. Sec., Dr. Sam J. Albright, Box 54, Searcy. Eclectic. Little Rock, May 9. Sec., Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith. Homoeopathic. Little Rock, May 9. Sec., Dr. Allison A. Pringle, Eureka Springs.

CONNECTICUT: Basic Science. Prerequisite to license examination. New Haven, June 10. Address State Board of Healing Arts, 1895 Yale Station, New Haven.

IOWA: Iowa City, June 6-8. Dir., Mr. H. W. Greffe, Capitol Bldg., Des Moines.

KENTUCKY: Louisville, June 7. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

MISSOURI: St. Louis, June 7-9. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. The examinations will be held at centers where there are five or more candidates, May 8-10, June 26-28, and Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: Basic Science. Omaha, May 2-3. Regular. Omaha, June 7-9. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEVADA: Carson City, May 1. Sec., Dr. Edward E. Hamer, Carson City.

OHIO: Columbus, June 6-9. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

WISCONSIN: Basic Science. Milwaukee, June 17. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. Regular. Milwaukee, June 27-29. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.

WYOMING: Cheyenne, June 5. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

Book Notices

Poliomyelitis: A Survey Made Possible by a Grant From the International Committee for the Study of Infantile Paralysis. Organized by Jeremiah Milbank. Cloth. Price, \$6. Pp. 562, with 49 illustrations. Baltimore: Williams & Wilkins Company, 1932.

The International Committee for the Study of Infantile Paralysis was organized in 1928 through a grant of a quarter of a million dollars by Jeremiah Milbank. The committee, under the leadership of William H. Park, consisted of thirteen representatives from the United States and one from England. Through a period of four years it sponsored work on poliomyelitis in various research laboratories in America and abroad, resulting in the publication in the medical press of eighty papers. The present volume is based on these reports, together with a bibliographic study of about eight thousand other articles on poliomyelitis. There are seven chapters in the book, devoted to historical summary, etiology, resistance and immunity, symptomatology, treatment, pathology and epidemiology. There is a topical analysis of each chapter and an excellent bibliography of forty-four pages. The research worker dealing with any phase of poliomyelitis will find this book of great value. As the publishers state, it is "a veritable one-volume reference library which embodies the most complete, up-to-date information available on all important aspects of the subject." The physician in general practice, however, will find less to help him if he is looking for a simple set of directions for the treatment of his patients. Each subject is gone into in great detail, the shortcomings as well as the merits of any procedure being fully emphasized. To all persons desiring to inform themselves on the sum of human knowledge regarding poliomyelitis, the book is recommended.

Die juvenile amaurotische Idiotie: Klinische und erblichkeitsmedizinische Untersuchungen. Von Torsten Sjögren, Statens Institut för Rarbiologi, Uppsala und S:t Lars Sjukhus, Lund. Paper. Pp. 197-426, with illustrations. Lund: Berlingska Boktryckeriet, 1931.

The term amaurotic family idiocy usually recalls to one's mind the well known morbid entity described by Tay in 1881 and by Sachs in 1887 and known as the infantile form of this disease. The most remarkable features are the exclusive and early occurrence (at about 6 to 8 months) in Jewish infants

of blindness, of dementia and of a cherry-red spot in the region of the macula. Amaurotic family idiocy occurs also in non-Jewish children but much later in life, at the age of 4 years or after, lasts much longer, and, instead of a cherry-red spot, it exhibits other retinal changes, mainly retinitis pigmentosa. While the infantile form of Tay-Sachs disease is easy to diagnose, the juvenile form always remains undiagnosed and is considered a very rare disease. Sjögren showed that this is not the case. By studies of fifty cases of blind children in various stages of the disease with especial reference to heredity and family occurrence and the chronological development of the neurologic signs and symptoms, he was able to prove beyond doubt that this form of amaurotic idiocy is quite common, at least in Sweden, and that it possesses not only familial but also certain hereditary features. Sjögren could show that lesions of the central nervous system in the nature of dementia paralytica, cerebral palsies, cerebellar ataxia, and extrapyramidal tract involvement associated with retinitis pigmentosa strongly suggest amaurotic family idiocy. The latter may be diagnosed even in cases in which retinitis pigmentosa is a solitary phenomenon. There is no other monograph on amaurotic family idiocy in existence that is so rich in new observations, so scholarly and so important not only to the science of neuropsychiatry but also to that of heredity.

The Sign of Babinski: A Study of the Evolution of Cortical Dominance in Primates. By John F. Fulton, Sterling Professor of Physiology in the Yale University School of Medicine, and Allen D. Keller, Professor of Physiology and Pharmacology in the School of Medicine, University of Alabama. Cloth. Price, \$5. Pp. 165, with 66 illustrations. Springfield, Ill.: Charles C. Thomas, 1932.

This expensive monograph on a single neurologic sign will hardly interest any one besides the clinical neurologist. The expense of the book is no doubt largely due to the illustrations. The value and necessity perhaps of using the primates in the prosecution of neurologic studies of human significance is emphasized. The authors furthermore have "attempted a systematic comparison of human reflexes, normal and pathological, with the corresponding reactions in representatives below man." In this experimental study, monkeys, baboons, gibbons and chimpanzees were used. These studies showed "that destruction of pyramidal pathways in lower primates such as the macaque and mangabey does not cause Babinski's sign to appear; in intermediate primates such as the baboon the plantar reflex is altered on destruction of the pyramidal pathways, and in the highest forms, including the chimpanzee and man, a small cortical lesion restricted to the motor representation of the lower extremity gives rise to the response. It is therefore justifiable to conclude that in the higher primates the sign of Babinski is associated with isolated destruction of the pyramidal pathways." In the appendixes to the book are given details on the anesthesia, surgery, electro-surgical methods and after-care of the animals, all of which is of the utmost value to the experimental physiologist.

L'angine de poitrine: Formes cliniques, traitement médical et chirurgical. Par Camille Lian, professeur agrégé à la Faculté de médecine de Paris. Avec la collaboration de MM. A. Blondel, G. Huret, M. Marchal, assistants à l'Hôpital Tenon, et H. Weil, chirurgien des hôpitaux. Paper. Price, 55 francs. Pp. 429, with 32 illustrations. Paris: Masson & Cie, 1932.

Lian starts out with a statement that angina pectoris is not a disease but a syndrome. It is a symptom complex based on a clinical picture and not on anatomic changes. The volume is largely given over to a defense of this thesis. It is robbed, therefore, of much value as a judicial consideration of facts because the author is always in the attitude of a special pleader. He admits that a large majority of cases of angina pectoris have as a basis an anatomic obstructive lesion in the coronary artery. Yet because of a resemblance in symptoms he puts into the same group not only the classic cases of angina of effort and acute coronary thrombotic occlusion but such diverse conditions as some cases of rheumatic endocarditis, paroxysmal tachycardia, gallstones and left-sided thoracobrachial neuralgia, together with so-called neurotic pseudo-angina, tobacco angina, and so on. Acute coronary thrombosis is classed as acute febrile angina pectoris. This subject, by the way, is in general well described and there is a good historical introduction. Another weakness of the author is his penchant for classification. Some of his schematic descriptions are helpful to the

memory but are not in strict accord with facts. Here and there also there are rather childish discussions over trivial claims of priority. There are many minor criticisms that might be made. Heberden's 100 cases were reported not in 1802 but in 1782. Heberden died in 1801. Allbutt and Mackenzie protested as vigorously as did Lian against the use of the term false angina, yet Allbutt's name is not in the bibliography. His volumes on angina pectoris were published in 1915. The case histories are not always convincing. Once Lian concludes that a painful seizure was due to the gallbladder because, when medicine was given for the relief of gallbladder pain, the pain stopped. Yet in spite of faults, some of which seem fundamental, there is much in the volume that is informing and stimulating. The attacks on the views of others are sometimes well made and call for defense by the advocates of views opposed to those of the author. Some of the pictures of typical and atypical cases are well drawn. The chapter on treatment will be found helpful, though the use of some of the remedies advocated is not justified on either theoretical or practical grounds.

Our Children: A Handbook for Parents. Edited by Dorothy Canfield Fisher and Sidonie Matsner Gruenberg. Prepared and sponsored by the Child Study Association of America. Cloth. Price, \$2.75. Pp. 348. New York: Viking Press, 1932.

The editors of this symposium have carefully selected articles by twenty-nine leading specialists in the fields of child training and parental guidance. Every phase of the subject is discussed and the material is presented in the order of the child's chronological age. The essays are divided into four sections, on the child's growth and development, the child at home, the child at school, and the child in the outside world. The value of the volume lies in the fact that it is a complete account of current thought and present-day opinion. The articles are short but frank and precise. They provide a valuable survey for those not well acquainted with the subject and a good review for those already well versed in the field. The chapter on sex education, by Benjamin C. Gruenberg, is particularly good in its completely frank discussion and information on this subject. The value of the text is enhanced by a carefully selected bibliography after each chapter, so that the reader may amplify the information on any subject in which he is interested. The book is highly recommended to physicians and those who are interested in obtaining a concise and authoritative presentation of the current thought on child training and parental guidance.

L'hypotension artérielle dans les maladies chroniques. Par Gaston Giraud, professeur à la Faculté de médecine de Montpellier. Paper. Price, 40 francs. Pp. 259. Paris: Masson & Cie, 1931.

This excellent volume presents a careful analysis of all the many chronic disturbances that may be associated with arterial hypotension. There is little discussion of primary or constitutional hypotension. An effort has been made to emphasize the mechanism of the production of hypotension by tabulation of the various factors involved; for example, general systolic hypotension is attributed to diminution of the circulating blood volume, which may be secondary to (a) intracardiac disease, (b) extracardiac pressure on the circulatory apparatus, (c) cardiac arrhythmias, (d) myocardial weakness or (e) peripheral difficulties (as in shock). Some of these divisions appear somewhat arbitrary. Systolic and diastolic hypotension are considered more or less separate phenomena. The major portion of the book deals with the relationship of secondary arterial hypotension with other diseases. Diseases of the heart, blood vessels, blood and nervous system, endocrinologic disturbances and respiratory, gastro-intestinal and renal diseases are all considered in turn. Parasitic infection, chronic intoxications, malnutrition and cachexia and cancer are also discussed. In brief, the discussion centers about the many chronic and debilitating diseases in which hypotension is only a part of the clinical picture. Not infrequently hypotension is an important factor in these diseases, but perhaps as frequently it is merely coincidental and its significance most limited. Certainly hypotension is not of great moment in hepatic cirrhosis, diabetes, gout, carbon monoxide poisoning or carcinomatosis. The material is well presented. The page format lends itself to rapid reference. The monograph is designed more for refer-

ence than for consecutive studious reading. There is a bibliography of 418 titles; the great majority are naturally from European literature. Unfortunately, the bibliographic data are not as complete as in American literature: in most instances the page of the article is not stated, nor is the volume of the periodical given. The book can be recommended as a reference volume tabulating the clinical relationships of secondary hypotension to the many disease conditions in which it may appear.

Pictorial Midwifery. By Comyns Berkeley, M.A., M.C., M.D., Consulting Obstetric and Gynecological Surgeon to the Middlesex Hospital. Illustrated by Georges M. Dupuy, M.D. Second edition. Cloth. Price, \$3. Pp. 172, with 257 illustrations. Baltimore: William Wood & Company, 1932.

The art of brief but adequate expression is exemplified in this excellent little book, which covers all the essentials of practical obstetrics. As indicated by the title, it is an atlas, well supplied with amply descriptive legends. The illustrations are chiefly line drawings in black and white well suited to the text. The two colored plates are excellent; one illustrates a full and clear description of the fetal circulation, with explanatory drawings. The authors would have done well to omit the illustration on page 138 showing the method of administration of saline solution into both breasts. This practice has long since been replaced by hypodermoclysis in safer portions of the body, such as the thighs, flanks or axillary regions. With this one exception the book is heartily recommended to nurses, students and practitioners of obstetrics as well as to midwives, for whom the book was prepared.

Précis de pathologie médicale. Par F. Bezancçon, Marcel Labbe, Léon Bernard, J.-A. Sicard et A. Clère. Tome V: Maladies du sang et des organes hématopoïétiques. Par P. Emile Weil, médecin de l'Hôpital Tenon, et Marcel Bloch, chef de laboratoire à la Faculté de médecine de Paris. Maladies des reins. Par Pasteur Valléry-Radot, professeur agrégé à la Faculté de médecine de Paris. Third edition. Cloth. Price, 70 francs. Pp. 779, with 169 illustrations. Paris: Masson & Cie, 1932.

The fifth volume of this series deals with diseases of the blood-forming organs and the kidney. The first part of the book is concerned with clinical hematology. There is a concise but comprehensive discussion on the composition and physiology of the blood. Embryology and physiology of the blood-forming organs are considered next. The authors then attempt to show at what point the pathologic modifications of the blood are intimately correlated with pathologic modifications of the blood-forming organs. The conception of blood dyscrasias as expressed by the authors is broad. They emphasize the fact that the study of the blood is only a means of discerning disturbances in other organs or tissues. Morbid hematology is discussed, but the point of view presented is functional. Such a presentation obviously involves the frequent use of hypotheses and speculation, but it has the merit of making the isolated facts assume a dynamic value. This section is well illustrated for a small textbook and enough fundamental discussion of histology and physiology is available to make a comprehensive clinical correlation. The second section is devoted to clinical renal pathology. The author of this section has made a definite effort to correlate the newer physicochemical studies of nephritis with the clinical aspects of the disease. The material in this chapter has been completely revised to correspond with the most recent developments in the subject. Chapters on the recent work on the pathology and pathologic physiology of edemas, hypertension, acidosis and nephrosis have been added. Both sections of this volume are well written. They are concise but contain a fund of essential information. Students and physicians will find this information engaging as well as instructive.

Lehrbuch der physiologischen Chemie in Vorlesungen. Von Emil Abderhalden, Prof. Dr. med. et phil. h. c., Direktor des Physiologischen Institutes der Universität Halle a. d. S. Sixth edition. Paper. Price, 40 marks. Pp. 852, with 24 illustrations. Berlin: Urban & Schwarzenberg, 1931.

This excellent and complete revision of the previous *Lehrbuch*, like the earlier editions, is intended to cover the biochemistry of mammals and mainly of man with emphasis on its application to modern medicine. The material is presented in thirty-eight well organized and exceedingly entertaining lectures. The reader is first introduced to the subject by three lectures of general character with the final emphasis on the synthesis of

carbohydrates in plants. Then follows the excellent biochemical treatment, including digestion and metabolism, of lipids, carbohydrates and proteins. Special chapters are added on the porphyrins, nucleic acids, enzymes, vitamins and mineral metabolism. The concluding chapters present more comprehensive and coordinated treatments of the quantitative aspects of metabolism, of specific needs, of dynamic action of foods, and of temperature regulation. The entire treatment is more biologic than chemical but is well balanced for the medical student. Much new and often amusing information is given in a delightful style. The general plan of the work calls for considerable repetition, which no doubt adds to its value as a textbook for students. Of particular importance are the numerous references given at the close of each chapter and the excellent subject index.

The Early Diagnosis of the Acute Abdomen. By Zachary Cope, B.A., M.D., M.S., Surgeon to St. Mary's Hospital, Paddington. Sixth edition. Cloth. Price, \$3.25. Pp. 248, with 30 illustrations. New York & London: Oxford University Press, 1932.

This manual, though small, covers the field thoroughly and is helpful in forming a correct opinion in evaluating the puzzling symptoms present in acute abdominal disease. A thorough examination and a careful early diagnosis are emphasized. The diagnosis and differential diagnosis of appendicitis is especially well stated, and the importance of an early operation is stressed. The acute symptoms in pregnancy and the puerperium and their diagnostic significance are covered in a thorough manner. The chapter on other diseases that may simulate acute disease of the abdomen and not demand surgical intervention is especially well stated and has a complete table, which should help the student to avoid pitfalls. The illustrations and diagrams in the text are ample and clear.

Handbuch der normalen und pathologischen Physiologie mit Berücksichtigung der experimentellen Pharmakologie. Herausgegeben von A. Bethe, G. v. Bergmann, G. Emden und A. Ellinger. Band XVIII: Nachträge und Generalregister zu Band I-XVIII. Paper. Price, 98 marks. Pp. 764, with 7 illustrations. Berlin: Julius Springer, 1932.

With the eighteenth volume the herculean task of the editors and collaborators of critically compiling this handbook is over. Ten years have elapsed since the task was begun. As a result, material additions to the knowledge then available have been published. Part of this material, incorporated in the present volume by some of the collaborators, comprises 473 pages of text, the remaining 291 pages consisting of the general index to all the volumes. Bound, the entire set occupies a trifle over 4 feet of shelf space. Aside from its physical size we cannot refrain from again recommending this immensely valuable bibliographic and informational tool to all institutions, be they hospitals, research laboratories or libraries. For years to come this reference work will be the source book of information to every biologist who is physiologically minded. In these times, particularly, no single worker can perhaps afford to own the set. Institutions of higher learning, as well as hospitals and libraries, owe it to their research workers and readers to have this complete set readily available. It should be added, however, that individual volumes can be purchased.

Praktische Diätetik mit über 500 Kochrezepten für diätetische Behandlung für Ärzte und Patienten. Von Gehl. Hofrat Dr. L. Roemheld, Sanatorium Schloss Hornegg. Third edition of "Praktischen diätetischen Kochbuchs" by Dr. Curt Pariser. Cloth. Price, 3.90 marks. Pp. 216. Leipzig: Fischers medizinische Buchhandlung, 1933.

As the author points out, this book is not considered to be another addition to the numerous books of dietetics already existing but attempts to be a reliable guide for the patient who is confined to a dietary regimen without being familiar with medical terms and culinary arts. According to this purpose, calories and weight measures are abolished entirely and spoons, glasses and plates are frequently used as terms. While the book does not bring anything new in conception of disease and dietary regimen, the physician may find numerous valuable and practical hints as to variety and preparation of food within a calculated diet. This holds particularly for the diseases of the gastro-intestinal tract, while nephritic and diabetic diets are discussed somewhat less in detail. Liver diet, basic and acid forming diet, ketogenic diet, are mentioned but limited to a few lines. The third and largest part of the book contains

numerous and precise instructions for preparing the various forms of food, from which much valuable information may be gained. Whether, however, a great deal of this food thus prepared in a way suitable for German patients might appeal to the taste of American patients remains to be seen.

The Sanitation of Water Supplies. By Murray P. Horwood, Ph.D., Associate Professor, Department of Biology and Public Health, Massachusetts Institute of Technology. Cloth. Price, \$3. Pp. 181, with 26 illustrations. Springfield, Ill.: Charles C. Thomas, 1932.

This is an interesting and clearly written description of water supplies and their relation to the public health. While little appeal will be made to the engineer because of the elementary character of the presentation, the material is available for the student who is interested in the subject from a general rather than a special point of view. All phases are given consideration, including sources and consumption of water, relation of water to disease, and methods of purification. Unfortunately, many of the tables have not been brought down to the present although in some instances the material is known to be readily available. For example, no figures for water consumption are given later than 1920. The volume is attractively printed and illustrated.

Die Schwangerschaftsdiagnose aus dem Harn: Praktische und wissenschaftliche Ergebnisse. Von Dr. S. Aschheim, Honorarprofessor an der Universität Berlin. Second edition. Paper. Price, 8.40 marks. Pp. 102, with 11 illustrations. Berlin: S. Karger, 1933.

This monograph was published on the fifth anniversary of the author's discovery of the presence of large amounts of hormone in the urine of pregnant women, a discovery that led to the Aschheim-Zondek biologic test for early pregnancy. In the present book, the author discusses the various biologic methods for detecting pregnancy, the original technic of Aschheim and Zondek, and the various modifications of it. He also takes up the many practical applications of the test in conditions other than normal pregnancy, such as intra-uterine death of the ovum, extra-uterine gestation, hydatidiform mole, chorionepithelioma and illnesses in nonpregnant individuals. The sources of error and the forensic significance of the test are also discussed. From the literature Aschheim collected reports of 8,086 cases in which his test was used and it proved to be reliable in 98 per cent. He also collected reports of 1,358 cases in which rabbits were used instead of mice, and the incidence of error in these cases was 1.7 per cent. The contents of this monograph as well as the companion one by Zondek should be familiar to every gynecologist and obstetrician, for they represent epoch-making scientific research.

An Arctic Safari: With Camera and Rifle in the Land of the Midnight Sun. By Richard L. Sutton, M.D., Sc.D., LL.D., Professor of Dermatology, University of Kansas. Cloth. Price, \$2.25. Pp. 199, with illustrations by the author and by Richard L. Sutton, Jr., A.M., M.D., and Emmy Lou Sutton, F.R.G.S. St. Louis: C. V. Mosby Company, 1932.

This is the fourth of a series of adventurous expeditions in which the author and his family explored the land of the midnight sun in quest of big game. There are many interesting encounters with polar bears, walrus, seals and arctic birds, in which both the camera and the rifle were effectively used. Life aboard a Norwegian sealer amid icebergs and floes is described in the author's inimitable manner. There are many suggestions regarding transportation and equipment that hunters in this region will find invaluable in planning their trips. The photography is excellent.

Die Wechselwirkungen der Blutdrüsen. Von Erich Leschke, a. o. Professor für Innere Medizin an der Universität Berlin. Paper. Price, 5.50 marks. Pp. 71. Leipzig: Curt Kahlisch, 1933.

This pamphlet, dedicated to Harvey Cushing, is a brief, if not topical, summary of facts and theories in regard to the functional interrelation of the endocrine glands. Consequently it presupposes detailed information regarding the action of each gland per se in health and in disease. The subject of endocrine and hormone interrelation has long been a fertile field for speculations and the catch basin for unsolved difficulties in many disturbances in disease. We are slowly emerging from fog and theory into the daylight of proved facts. Because of the relative feebleness of critical judgment displayed by the author of the present pamphlet, it cannot be classed as a contribution of significance in this difficult subject of biology and medicine.

Medicolegal**Society Proceedings****Husband Liable for Medical Service Rendered Wife***(Lowenstein v. Widdicomb (Mo.), 52 S. W. (2d) 1044)*

The plaintiff physician operated on Mrs. Widdicomb in September, 1919, and sent a bill to her and her husband for \$250. In December, 1919, the wife paid him \$50 on the account. In March and June, 1920, the plaintiff treated the wife for an ailment not connected with the operation. Thereafter he sent another statement showing a credit for the \$50 paid and including an additional charge of \$6 for the last treatments. The plaintiff sued the patient and her husband for \$206 in June, 1925. From a judgment for the plaintiff, the defendants appealed to the St. Louis court of appeals.

Medical attention, said the court of appeals, is a necessity for which the husband, so long as he and his wife are living together, is under legal obligation to supply his wife. Since there was evidence that the defendants were living together, it is immaterial whether or not the defendant husband engaged the plaintiff to perform the operation or whether or not he had any knowledge of it before it was performed. There is an implied contract on the part of the husband to pay for this necessity, unless it can be shown that the physician relied on a separate contract of the wife or for some other reason relied on the wife's responsibility alone.

Both defendants contended that the action, at least with respect to the balance of \$200 unpaid on the operation, was barred by the statute of limitations, which apparently denied recovery on claims more than five years old. But, said the court, the statute had not run against the account. There was a relationship here of physician and patient. Services were being rendered over a period of time. The account was carried over from the first item pertaining to the operation and the balance was made up after the payment of the \$50. Then the account carried forward this balance with the addition of the charges for subsequent treatments. There was extant one running account. This is not a case in which the parties have discussed their accounts and settled them as to the amount due. There never was any question of adjustment as to the amount. The first bill was for \$250 for the operation, and the wife paid \$50 on account. The idea of "a balance being struck" was never in this case. The bill was credited with the \$50 payment, and as the wife came again, the bill was increased by the additional charges for further medical attention. Since the last entry was not barred by the statute, the entire account is not barred. To hold otherwise, concluded the court, would be a denial of the legal and substantive rights of the plaintiff. The judgment in favor of the plaintiff was accordingly affirmed.

Workmen's Compensation Acts: Pneumonia Attributed to Inhalation of Gasoline Vapor.—An employee in the course of his employment inhaled vapors from a gasoline spraying machine operated by other employees. He became sick and dizzy and went home. Two days later, pneumonia developed. Attributing the pneumonia to the vapors from the gasoline spraying machine, he sought compensation, which the compensation commissioner allowed. The employer appealed to the district court for Hall county, which disallowed the claim and the employee appealed to the Supreme Court of Nebraska. The determining question on this appeal, said the Supreme Court, is whether or not the employee proved by a preponderance of the evidence that vapors from the gasoline spray caused the pneumonia. On behalf of the employee, the attending physician testified that gasoline might produce a lung irritation, that anything that will produce a lung irritation will produce pneumonia. He testified that it was possible for the inhalation of gasoline fumes to produce pneumonia but could not say that it did cause it. A physician called by the employer testified that the inhalation of the gasoline vapor did not cause the pneumonia. Other employees, said the court, who used the spraying machine at close range were not injured by the fumes. Since, in the opinion of the Supreme Court, the employee did not prove by a preponderance of the evidence that his injury was caused by an industrial accident, the judgment of the lower court, disallowing compensation, was affirmed.—*Townsend v. Loeffelbein (Neb.), 24 N. W. 118.*

COMING MEETINGS

- American Medical Association, Milwaukee, June 12-16. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.
- American Academy of Pediatrics, Chicago, June 12-13. Dr. Clifford G. Grunke, 636 Church Street, Evanston, Ill., Secretary.
- American Association for the Study of Gout, Memphis, Tenn., May 15-17. Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Ind., Secretary.
- American Association for the Study of the Feeble-Minded, Boston, May 31-June 3. Dr. Groves B. Smith, Beverly Farms, Godfrey, Ill., Secretary.
- American Association for Thoracic Surgery, Washington, D. C., May 9-11. Dr. Duff S. Allen, 3720 Washington Boulevard, St. Louis, Secretary.
- American Association of Genito-Urinary Surgeons, Washington, D. C., May 8-10. Dr. Henry L. Sanford, 1621 Euclid Avenue, Cleveland, Secretary.
- American Association of Pathologists and Bacteriologists, Washington, D. C., May 2-3. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.
- American Bronchoscopic Society, Washington, D. C., May 10. Dr. Edwin McGinnis, 104 South Michigan Boulevard, Chicago, Secretary.
- American Climatological and Clinical Association, Washington, D. C., May 9-10. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Massachusetts, Secretary.
- American Dermatological Association, Chicago, June 8-10. Dr. W. H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.
- American Gastro-Enterological Association, Washington, D. C., May 8-9. Dr. John Bryant, 311 Beacon Street, Boston, Acting Secretary.
- American Gynecological Society, Washington, D. C., May 8-10. Dr. Otto H. Schwarz, 630 South Kingshighway, St. Louis, Secretary.
- American Laryngological Association, Washington, D. C., May 9-10. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otolological Society, Chicago, June 8-10. Dr. Robert L. Loughran, 33 East 63d Street, New York, Secretary.
- American Neurological Association, Washington, D. C., May 9-11. Dr. Henry A. Riley, 117 East 72d Street, New York, Secretary.
- American Ophthalmological Society, Washington, D. C., May 8-10. Dr. J. Milton Griscorn, 2213 Walnut Street, Philadelphia, Secretary.
- American Orthopedic Association, Washington, D. C., May 8-10. Dr. DeForest P. Willard, 1916 Spruce Street, Philadelphia, Secretary.
- American Otolological Society, Washington, D. C., May 8-9. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.
- American Pediatric Society, Washington, D. C., May 8-10. Dr. Hugh McCulloch, 325 North Euclid Avenue, St. Louis, Secretary.
- American Proctologic Society, Chicago, June 12-13. Dr. Frank G. Runyon, 1361 Perkiomen Avenue, Reading, Pa., Secretary.
- American Psychiatric Association, Boston, May 29-June 2. Dr. Clarence O. Cheney, 722 West 168th Street, New York, Secretary.
- American Society for Clinical Investigation, Washington, D. C., May 8. Dr. H. L. Blumgart, Beth Israel Hospital, Boston, Secretary.
- American Society of Clinical Pathologists, Milwaukee, June 9-12. Dr. A. S. Giordano, 531 North Main Street, South Bend, Ind., Secretary.
- American Surgical Association, Washington, D. C., May 8-10. Dr. Vernon C. David, 59 East Madison Street, Chicago, Secretary.
- Arkansas Medical Society, Hot Springs, May 2-4. Dr. William R. Bathurst, 213 West Second Street, Little Rock, Secretary.
- Association for the Study of Allergy, Milwaukee, June 12-13. Dr. Warren T. Vaughan, 808 Professional Building, Richmond, Va., Secretary.
- Association for the Study of Internal Secretions, Milwaukee, June 12-13. Dr. F. M. Pottenger, 1930 Wilshire Boulevard, Los Angeles, Secretary.
- Association of American Physicians, Washington, D. C., May 9-10. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.
- California Medical Association, Del Monte, April 24-27. Dr. Emma W. Pope, 450 Sutter Street, San Francisco, Secretary.
- Conference of State and Provincial Health Authorities, Washington, D. C., June 5-6. Dr. A. J. Chesley, State Department of Health, St. Paul, Secretary.
- Congress of Physicians and Surgeons of North America, Washington, D. C., May 9-10. Dr. John T. King, Jr., 1210 Eutaw Place, Baltimore, Secretary.
- Connecticut State Medical Society, Hartford, May 24-25. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- District of Columbia, Medical Society of the, Washington, May 3. Dr. C. B. Conklin, 1718 M Street N. W., Washington, Secretary.
- Florida Medical Association, Hollywood, May 2-4. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.
- Georgia, Medical Association of, Macon, May 9-12. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.
- Illinois State Medical Society, Peoria, May 16-18. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.
- Iowa State Medical Society, Des Moines, May 10-12. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.
- Kansas Medical Society, Lawrence, May 2-4. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-26. Dr. Walter Dent Wise, 1211 Cathedral Street, Baltimore, Secretary.
- Massachusetts Medical Society, Boston, June 5-7. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.
- Medical Women's National Association, Milwaukee, June 11-12. Dr. Inez A. Bentley, 45 Gramercy Park, New York, Secretary.
- Minnesota State Medical Association, Rochester, May 22-24. Dr. E. A. Meyerdier, 11 West Summit Avenue, St. Paul, Secretary.
- Mississippi State Medical Association, Jackson, May 9-11. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Kansas City, May 1-4. Dr. E. J. Goodwin, 634 North Grand Boulevard, St. Louis, Secretary.
- Nebraska State Medical Association, Omaha, May 23-25. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.
- New Hampshire Medical Society, Manchester, May 16-17. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- New Jersey, Medical Society of, Atlantic City, June 6-9. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.

Oklahoma State Medical Association, Oklahoma City, May 15-17. Dr. C. A. Thompson, Commercial National Bank Building, Muskogee, Secretary.
Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 167 Angell Street, Providence, Secretary.
Society for the Study of Asthma and Allied Conditions, Washington, D. C., May 6. Dr. W. C. Spain, 116 East 53d Street, New York, Secretary.
South Dakota State Medical Association, Huron, May 15-17. Dr. John F. D. Cook, Langford, Secretary.
Texas, State Medical Association, Fort Worth, May 8-11. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.
West Virginia State Medical Association, Charleston, May 22-24. Mr. Joe W. Savage, Professional Building, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

Alabama Medical Association Journal, Montgomery

2: 253-296 (Jan.) 1933

- *Surgical Treatment of Harelip and Cleft Palate. M. Skinner, Selma.—p. 253.
- *Early Hemorrhages of Pregnancy. T. M. Boulware, Birmingham.—p. 260.
- Mobile's Gifts to Medicine and Public Health. J. N. Baker, Montgomery.—p. 264.
- Etiology of Lichen Planus. F. E. Stockton, Birmingham.—p. 266.
- Tuberculin Testing. P. W. Auston, Opelika.—p. 269.
- Case of Pellagra Treated with Insulin. G. Walsh and W. G. Morgan, Fairfield.—p. 274.
- Status of Diphtheria Immunity in Typical Alabama County. O. L. Chason, Montgomery.—p. 275.
- Electrocardiographic Interpretation of Cardiac Arrhythmias. T. K. Lewis, Birmingham.—p. 279.

Surgical Treatment of Harelip and Cleft Palate.—Skinner states that the treatment of complete harelip should start the day the baby is born, although the operation to close the lip should not be undertaken before one month or six weeks after birth. If, from birth, the lip is kept approximated by adhesive strapping until the time of operation, one will be amazed at the narrowing that will be effected in the cleft. The author's technic is as follows: Having disposed of the cleft in the alveolus by a modification of the Laugenbeck operation, he puts the lip under tension by the use of Allis forceps and freely divides the attachment of the lip to the alveolus in order to mobilize the lip. With slight traction on the Allis forceps he puts the lip under tension and estimates the proposed incisions by calipers. He denudes the margins of the cleft by using a sharp pointed knife to perforate the lip about one-eighth inch from the margin of the cleft. He then sutures the wound with interrupted sutures of fine, waxed silk, the sutures embracing all the layers of the lip except the derma. He first places the suture to close the nostril. Care must be exercised in its placement. The next stitch in importance is the one approximating the lip at the vermilion border. He places all the sutures, except those coapting the vermilion, before he ties any of them. He ties these silk sutures on the oral side of the wound. After he has tied them he trims the vermilion so that, when the margins are approximated, there will be a slight but definite fullness at the line of suture. Subsequent contracture of the lip will erase the pout and, if it is not provided for, contracture will cause a definite notch deformity. He closes the skin and lip margin with interrupted horsehair, taking care to avoid infolding of the skin. For double harelip the author uses the Koenig operation.

Early Hemorrhages of Pregnancy.—Boulware points out that incomplete abortion is the most common cause of uterine hemorrhage during the early months of pregnancy. Contrary to the rather prevalent conservative policy of nonintervention, he believes that the uterus should be evacuated in every case of frank incomplete abortion. The term "evacuation" is sharply differentiated from ordinary curettage. He reports a series of

437 cases of incomplete abortion: a study of the patients' admission temperatures, leukocyte counts and sedimentation rates indicated that these observations are not absolutely trustworthy guides to the presence or absence of actual infection. The author discusses "toxic absorption," as productive of alterations in temperatures and laboratory observations. He believes that intravenous mercurochrome in dosages of from 5 to 15 cc. of a 1 per cent solution is often of value in septic cases. He gave this solution to twenty-eight patients in his series. Moderate reactions occurred in twelve cases, severe reactions in two. There was no kidney damage as demonstrable by urinalysis, and the occasional diarrhea was transitory. In many cases the clinical improvement was striking, in others it was disappointing. As one's efforts in treating a case of true septic abortion are somewhat limited, a trial of this drug seems justified.

American Journal of Anatomy, Philadelphia

52: 1-151 (Jan. 15) 1933

- Studies of Living Nerves: II. Activities of Ameboid Growth Cones, Sheath Cells and Myelin Segments, as Revealed by Prolonged Observation of Individual Nerve Fibers in Frog Tadpoles. C. C. Spidel, Charlottesville, Va.—p. 1.
- Later Stages of Developmental Growth in Hyena Skull. T. W. Todd and F. P. Schweikher, Cleveland.—p. 81.
- Innervation of Human Lung. O. Larsell and R. S. Dow, Portland, Ore.—p. 125.
- Relationship Between Chief and Colloid Cells of Acinar Epithelium of Thyroid Gland. B. Webster, New Orleans.—p. 147.

American Journal of Medical Sciences, Philadelphia

184: 753-900 (Dec.) 1932

- Blood Volume in Chronic Arthritis. M. I. Sparks and R. L. Haden, Cleveland.—p. 753.
- Streptococcal Agglutination in Chronic Arthritis and Acute Rheumatic Fever. B. J. Clawson, M. Wetherby, E. H. Hilbert and H. E. Hilleboe, Minneapolis.—p. 758.
- *Monocytic Leukemia with Data on Individuality and Development of Monocyte. G. E. Farrar, Jr., and J. D. Cameron, Ann Arbor, Mich.—p. 763.
- *Acute Monocytic Leukemia: Case with Partial Autopsy. V. P. Sydenstricker and T. B. Phinney, Augusta, Ga.—p. 770.
- *Hematopoietic Response in Pernicious Anemia Following Intramuscular Injection of Gastric Juice. R. S. Morris, L. Schiff, G. Burger and J. E. Sherman, Cincinnati.—p. 778.
- Pericardial Effusion: Clinical Study. P. D. Camp and P. D. White, Boston.—p. 782.
- Nonfatal Stab Wounds of Ventricle: Electrocardiographic Signs of Coronary Thrombosis and Absence of Anginal Pain. W. B. Porter and I. A. Bigger, Richmond, Va.—p. 799.
- *Use of Bacteriophages in Wound Infections and in Bacteremias. W. J. MacNeal, New York.—p. 805.
- Observations on Effects of Oxygen Therapy: II. Changes in Circulation and Respiration. L. N. Katz, W. W. Hamburger and S. H. Rubinfeld, Chicago.—p. 810.
- Id.: III. Blood Chemical Changes. D. J. Cohn, L. N. Katz, S. Soskin and W. W. Hamburger, Chicago.—p. 818.
- Ovarian Follicle Hormone Therapy in Ovarian Insufficiency and Menopause. B. Webster, New York.—p. 822.
- Hyperperistaltic Electrographic Effects. I. H. Tumpeer, with technical assistance of Bessie Phillips, Chicago.—p. 831.
- *Pellagra: Improvement While Taking So-Called "Pellagra-Producing" Diet. T. D. Spies, Cleveland.—p. 837.
- Absorption from Pleural Cavity of Dogs: II. Lymphatic System. W. S. Lemon and G. M. Higgins, Rochester, Minn.—p. 846.

Monocytic Leukemia.—Farrar and Cameron report a case of monocytic leukemia which began with malaise, fever, chills, weakness and gingivitis. A period of marked improvement with residual weakness followed. The patient was first seen during his second exacerbation of symptoms when a necrotic stomatitis developed. Following several transfusions, a second remission occurred. A third exacerbation of symptoms followed, which rapidly progressed to a fatal terminal condition twenty-eight weeks after the onset of the disease. The blood picture changed from one with 40,000 mature monocytes (transitional forms) per cubic millimeter through a stage of symptomatic remission in which the white blood count reached a normal level and the differential count revealed the round nucleus type of mature monocytes in normal numbers. Before the rise in the white blood count with the third exacerbation of symptoms, a less differentiated type of monocyte appeared in the blood films in increasing numbers. Immature monocytes rapidly increased in numbers and immaturity until the terminal blood film showed 180,000 primitive blasts per cubic millimeter, the monocyte blast, whose appearance and characteristics are different from those of the myeloblast, and the lymphoblast. The progressive changes in the maturity of the monocytes in the blood of the authors' patient demonstrate

a third definite leukocyte series—mature monocyte, young monocyte, monocyte blast—which does not involve the reticulo-endothelial system.

Acute Monocytic Leukemia.—Sydenstricker and Phinizy report a case of acute monocytic leukemia. Although multiple infections were present, negative cultural studies and the course of the disease seemed to eliminate pyogenic infection as a cause of the blood picture. The type cell in both mature and immature stages was adequately identified with peroxidase and supravital as well as the conventional stains. It was differentiated from cells of the myeloid and lymphatic series as belonging to the monocyte series. A direct derivation of the monocyte from the reticulo-endothelium offers a logical explanation of the occurrence of this type of leukemia.

Hematopoietic Response in Pernicious Anemia.—Morris and his associates gave normal human gastric juice, concentrated by distillation in vacuo, to patients with pernicious anemia. The injection of the equivalent of 450 cc. of gastric juice to a patient with 2.1 million red cells led to a reticulocytosis of 17.6 per cent in thirty-six hours. Twelve days after the injection, the red count and percentage of hemoglobin began to increase. Within the period of the next twelve days, the count increased by 1.5 million cells and the hemoglobin by 20 per cent. The count then remained stationary until further treatment was instituted. A second patient, who received intensive intramuscular treatment with Lilly's liver extract number 343, improved after this until the red count reached 4.1 million, where it remained for four weeks despite daily intramuscular injections of 4 cc. of the extract. Then, an intramuscular injection of the equivalent of 300 cc. of human gastric juice was given. Within fourteen days, the red count had increased to 5.1 million and the hemoglobin had risen from 76 per cent to 88 per cent when the patient was discharged. The reticulocytes rose from 0.5 per cent to 2.7 per cent within nine hours after the injection. The authors conclude that the results obtained in these patients prove the presence in normal gastric juice of a powerful bone marrow stimulant, one which produces not only a marked and rapid reticulocyte increase after intramuscular injection but also rapid maturation of the red cells. It seems probable that the temporary lack of addisin in the gastric juice is the cause of pernicious anemia.

Bacteriophages in Wound Infections.—MacNeal states that infected wounds, whether accidental or surgical, have been treated by bacteriophage in several instances with good success. When the infection is chiefly by *Staphylococcus aureus*, local applications of dressings wet with the staphylococcus broth bacteriophage filtrate usually bring about rapid improvement. The purulent exudate is washed away, healthy granulations appear, and the wound proceeds to prompt healing. Operative incisions in the abdominal wall that have become soiled with intestinal contents by perforation of the intestine have been treated by the application of large amounts of mixed bacteriophage preparations, including bacteriophages active against staphylococcus, colon bacillus, dysentery bacilli and *Bacillus pyocyaneus*. When blood stream infection is a sequel of a local staphylococcal wound infection, the author recommends the application of large quantities of the bacteriophage to the surface of the wound. At the same time, however, he undertakes the intravenous injection of the bacteriophage. For this purpose he employs a special filtrate prepared in a culture medium without protein and containing asparagin as the important source of nitrogen. This bacteriophage preparation does not of itself produce serious toxic symptoms in animals and it seems to be far less dangerous to the patient than is the filtrate of broth culture. Staphylococcal bacteremia is a disease with a high mortality and one does not undertake its treatment without recognizing that failure will be commonly encountered. He has, however, had an opportunity to observe some instances of actual recovery after repeated positive blood cultures in staphylococcal bacteremia. As a sequel to bacteremia one encounters metastatic localizations of the inflammatory process. The treatment of these localizations by bacteriophage presents serious difficulties, which have not been overcome, and at present it seems that surgical drainage when applicable will, as a rule, be required in order to offer any hopeful outlook for bacteriophage therapy. The author presents the records of seven patients in whom he employed bacteriophage therapy.

Pellagra-Producing Diet.—For his study Spies chose six patients, four of whom were white males and the other two were Negroes. All had a definite history of a low food intake, and three of the males and one of the females had a history of alcoholism. Five of the patients had stomatitis, four had diarrhea and anal lesions, and four had mild mental symptoms. Bilaterally symmetrical dermatitis characteristic of pellagra was found on the hands of all patients. Both females had vaginal ulcerations and large butterfly-shaped, symmetrical lesions of the vulva, thighs and anus, typical of pellagra. The reflexes were essentially normal in all patients. Each patient received a daily diet of 2,300 calories (carbohydrate, 1,700; protein, 110; fat, 490) consisting of cornmeal mush, cornmeal muffins, pork fat, maple syrup, polished rice, cornstarch pudding, coffee and sugar. This diet was administered from the time the patients entered the hospital until the skin lesions had cleared in all except one patient, who had partial improvement of the dermatitis, a gain of 5 pounds (2.3 Kg.) and a return of gastric acidity during the three weeks she tolerated the diet. Every effort was made to induce the patients to eat the full 2,300 calories. They were carefully watched and were not allowed any other nourishment. The author suggests the possibility of a secondary factor in the production of pellagra, perhaps analogous to the gastric defect of pernicious anemia. He does not recommend the indiscriminate continuous administration of such a restricted diet to patients presenting pellagra.

American J. Obstetrics and Gynecology, St. Louis

24: 797-966 (Dec.) 1932

- Relation of Placental Infarcts to Eclamptic Toxemia: Clinical, Pathologic and Experimental Study. R. A. Bartholomew and R. R. Kracke, Atlanta, Ga.—p. 797.
- *Researches on Toxemias of Later Pregnancy. V. J. Harding and H. B. van Wyck, Toronto, Canada.—p. 820.
- Relation of Anterior Lobe of Hypophysis to Genital Function. B. Zondek, Berlin, Germany.—p. 836.
- Some Experiences in Diagnosis and Treatment of Congenital Anomalies of Female Genital Tract. B. C. Hirst, Philadelphia.—p. 843.
- Fetal Mortality and Breech Presentation. D. G. Morton, San Francisco.—p. 853.
- Results of Operations for Prolapse of Uterus and Bladder. G. M. Laws, Philadelphia.—p. 864.
- *Pathology of Thyroid Gland Complicating Pregnancy. C. H. Frazier and H. F. Ulrich, Philadelphia.—p. 870.
- Uncomplicated Prolapse of Ovary, Due to Elongation of Infundibulopelvic Ligament and Its Treatment. B. C. Hirst and I. Andrussier, Philadelphia.—p. 879.
- Review of Five Hundred and Seventy Forceps Operations. M. A. Novey, Baltimore.—p. 882.
- *Use of Barbiturates with Ether by Rectum: Preliminary Report. C. B. Lull, Philadelphia.—p. 888.
- *Temporary Sterilization by Injection of Human Spermatozoa: Preliminary Report. M. J. Baskin, Denver.—p. 892.
- Slowing of Fetal Heart and Its Relation to Fetal Placental Circulation. M. Leff, New York.—p. 898.
- Indications for Sterilization. L. H. Douglass, Baltimore.—p. 903.
- Ramifying Angiomyoma of Uterus: Report of Case. L. C. Pusch, Richmond, Va.—p. 907.
- Adenosarcoma of Body of Uterus. L. Sophian, New York.—p. 911.
- Artificial Pneumothorax and Pregnancy: Report of Two Cases. J. W. Cutler, Philadelphia.—p. 914.
- Test for Ruptured Bag of Waters. M. M. Berlind, Brooklyn.—p. 918.
- Rôle of Frontier America in Development of Cesarean Section. N. J. Eastman, Baltimore.—p. 919.

Toxemias of Later Pregnancy.—Harding and van Wyck state that their observations on the effect of added salt to the diet or on the use of hypertonic saline solutions show that the normal pregnancy remains normal and that the toxemic pregnancy has an exaggeration of symptoms. A study of many of the older and some of the more recently suggested forms of treatment shows that they cause the removal of water from the body or may be involved in some change in the internal distribution of water. The "edema" theory of Zangemeister at present offers the most unifying view of the toxemias of later pregnancy. It requires modification, however, to allow for the formation of edema in individual organs, apart from a generalized water retention, and for the possibility of internal changes in water distribution. Further progress might be made by a more intensive study of the atypical forms of toxemia and by a wider acceptance both in theory and in practice of the value of observations of weight during pregnancy. The variability of the toxemias of later pregnancy is in harmony with the assumption that they possess one origin and a multiplicity of symptoms.

Pathology of Thyroid Complicating Pregnancy.—According to Frazier and Ulrich, an appreciable response by the thyroid to the state of pregnancy is frequently noted. Hypothyroidism in a pregnant woman may cause miscarriage; or if a living baby is delivered, the baby may have cretinism or a goiter. The judicious administration of thyroid extract to pregnant, hypothyroid mothers will prevent these complications. The development of simple goiter during pregnancy does not interfere with the normal course of events. The use of iodine during pregnancy may prevent the development of simple goiter. Nodular goiters that threaten the life of the mother should be removed regardless of pregnancy. During pregnancy, thyrotoxicosis developed in 3.2 per cent of the women on whom thyroidectomy had been performed in the authors' clinic. They report the records of seven patients with toxic goiter, on whom thyroidectomy was performed during pregnancy. All the pregnancies went to term and the mothers were delivered of normal babies. Mild degrees of thyrotoxicosis during pregnancy may be controlled by the use of iodine. In cases in which severe degrees of thyrotoxicosis complicate pregnancy or in milder degrees of toxicity not controlled by iodine, thyroidectomy should be performed at once. The recurrence of thyrotoxicosis during pregnancy, subsequent to thyroidectomy for toxic goiter, may be prevented by the administration of iodine. The treatment of malignant tumors of the thyroid should be carried out without regard for an associated pregnancy.

Use of Barbiturates with Ether by Rectum.—Lull states that the good results obtaining by the use of the barbiturates with ether by rectum for the relief of pain during the first and second stage of labor warrant the continued use of these drugs. This method of sedation can be given earlier in the course of labor than most methods in vogue at the present time. Primiparous patients seem to respond more definitely than do multiparous. One who uses this procedure should be prepared to deliver the patient with outlet forceps at the termination of the second stage of labor. There is no contraindication to giving inhalation anesthesia to complete the delivery. There has been no harmful effect on the mother or the child. The injection should be given by a person who is particularly trained in the administration of rectal medication. Relaxation of the pelvic muscles seems to be better than under ordinary circumstances. Patients given this instillation cannot be depended on to cooperate during the second stage of labor because, if not entirely unconscious, they are mentally confused to the point of being irrational. In the author's limited experience this method of analgesia has proved satisfactory enough and not fraught with any danger, so that he will continue its use until a larger series has been collected.

Temporary Sterilization by Injection of Human Spermatozoa.—Baskin presents the results of the temporary sterilization of twenty women by the injection of human spermatozoa. He concludes that immunization of women with human spermatozoa is possible. The immunization lasts about one year. Revaccination at the end of the year prolongs the immunity for at least another year. The period of immunity and degree of immunity can be determined by the blood. Spermatotoxic properties of cervical secretions are not constant. The injections are harmless to the patient. The technic has been as follows: After intercourse in which a condom was used, the semen was tied and brought to the office as soon as possible. One cubic centimeter of hexylresorcinol was added. The entire amount was drawn into a syringe and injected into the buttocks. No semen was used with a count of less than 80,000,000 per cubic centimeter; three injections were given seven days apart. The amounts of semen injected at each injection varied from 2 to 5 cc.

American Journal of Orthopsychiatry, Menasha, Wis.

3:1-94 (Jan.) 1933

- Birth Lesion as Category of Mental Deficiency. E. A. Doll, Vineland, N. J.—p. 1.
Use of Transference in Dealing with Delinquents. S. Biddle, Philadelphia.—p. 14.
Relation of Maternal Overprotection to School Grades and Intelligence Tests. D. M. Levy, New York.—p. 26.
Significance of Emotional Attitudes in Psychoanalytic Situation. F. Alexander, Chicago.—p. 35.
Church and Individual Security. Bertha C. Reynolds, New York.—p. 44.
Weight and Skeletal Build. C. Rosenow, New York.—p. 55.
Time Element in Therapy. Jessie Taft, Philadelphia.—p. 65.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

29:1-144 (Jan.) 1933

- Factors Influencing Types of Metastatic Carcinoma of Bone. E. E. Downs and W. S. Hastings, Philadelphia.—p. 1.
Cholecystographic Diagnosis of Neoplasms of Gallbladder. B. R. Kirklin, Rochester, Minn.—p. 8.
*Value of Roentgen Ray in Diagnosis of Renal Tuberculosis. C. A. Waters, Baltimore.—p. 17.
*Pyloric Stenosis with Hypertrophy of Pyloric Muscle in Adult. E. P. McNamee, Cleveland.—p. 24.
Chondrodystrophia Fetalis: Roentgen Study of Four Cases; Two in Father and Daughter; Emphasizing Epiphyseal Changes and Variants. P. O. Snook, Lancaster, Pa.—p. 31.
Clinical Illustrations of Deep Roentgen-Ray and Radium Burns. J. S. Davis, Baltimore.—p. 43.
*Roentgen Therapy of Rheumatic Heart Disease: Review of Six Years' Experience. R. L. Levy and R. Golden, New York.—p. 79.
Roentgen Treatment of Lymphoblastoma (Hodgkin's Disease). K. R. McAlpin and R. Golden, New York.—p. 83.
Myelogenous Leukemia. E. L. Jenkinson, Chicago.—p. 91.
*Clinical and Radiotherapeutic Considerations of Follicular Lymphoblastoma. N. Rosenthal, W. Harris and A. Kean, New York.—p. 95.

Roentgen Ray in Renal Tuberculosis.—Waters points out that no urologic investigation for renal tuberculosis is complete without satisfactory roentgenograms and pyelograms of the urinary tract. The early roentgen observations in renal tuberculosis are "fringing" of the calices and possibly calcification in areas of cortical necrosis. His statistics show a diagnostic accuracy of 70 per cent in the pyelographic series. On the other hand, 40 per cent of the cases of known renal tuberculosis showed areas of cortical calcification in the roentgenogram. While the direct smear yielded only 55 per cent diagnostic accuracy, the guinea-pig inoculations yielded positive evidence in the other 45 per cent. There are no contraindications to pyelography in renal tuberculosis. Intravenous urography has so far not yielded the brilliant results hoped for, but with improvement in the injection material and technic it is possible that great diagnostic accuracy may be evolved.

Pyloric Stenosis.—It has been recognized since 1835 that hypertrophic pyloric stenosis occurs in the adults. McNamee suggests "idiopathic pyloric stenosis" as the term that will best identify this condition. The most characteristic roentgen observations are a concentric and elongated pyloric canal, widening of the pyloric sulcus and a constant, unchanging appearance of the pylorus. The diagnosis can be made by the correlation of the clinical manifestations and roentgen observations but not by the roentgen evidence alone. He reports two cases of hypertrophic pyloric stenosis, proved at operation. Surgical treatment is needed for permanent relief of symptoms. Gastroenterostomy was favored by the earlier surgeons but, more recently, some type of plastic operation on the pylorus has been used and is now the method of choice.

Roentgen Therapy of Rheumatic Heart Disease.—Levy and Golden gave thirty-two patients with rheumatic heart disease of varying degrees of severity 281 roentgen irradiations over the cardiac area in six years. They observed improvement in seventeen instances, in some cases more marked than they anticipated. They considered roentgen therapy of doubtful value in six cases, and two cases did not improve. Seven patients died: two of subacute bacterial endocarditis, and five of cardiac insufficiency. Five patients with paroxysms of severe heart pain have been completely relieved. Temporary relief was afforded in two, and in one instance no beneficial effect was observed. In a number of cases, following roentgen therapy, a low grade, smoldering carditis apparently has become inactive. In such patients there have been no signs of recrudescence of active rheumatism during the period of observation, which in seven instances has been over five years. They noted changes in the form of the electrocardiogram in nineteen cases. They believe these changes due to the effects of irradiation on the myocardium, with modification of the rheumatic lesions. They observed irradiation reactions in sixteen patients. There was no evidence of injury to the heart nor was the course of the disease unfavorably influenced. Their earlier impressions concerning the value of irradiation of the heart in rheumatic carditis have been confirmed after a six year period of observation. Patients in the first attack of rheumatic fever, with slight cardiac involvement, offer the best chance for successful therapy, and in them the danger of subsequent cardiac damage may be minimized. In cases of low grade infection and predominantly cardiac involvement, activity of the lesions often appears to subside following roent-

gen treatment. Roentgen therapy may afford great relief to certain patients with rheumatic heart disease in whom paroxysmal cardiac pain is the chief form of discomfort.

Radiotherapeutic Considerations of Follicular Lymphoblastoma.—Rosenthal and his associates call attention to the clinical, pathologic and prognostic characteristics of follicular lymphoblastoma. This condition is associated with generalized adenopathy and usually splenomegaly. Microscopically, it may be differentiated from other forms of lymphosarcoma by the unusual giant follicle formation. In four of their cases, exclusively in women, exophthalmos occurred during the course of the disease. The prognosis with respect to longevity is more favorable than in other forms of lymphosarcoma. Follicular lymphoblastoma is markedly radiosensitive. The authors employ fractional doses of high voltage roentgen therapy (from 180 to 200 kilovolts). The average dose is about 200 roentgens. All the involved areas are treated at three or four day intervals. As a rule, a test treatment of about 125 roentgens is employed at first. They adopted this procedure after learning of an accident that occurred in the treatment of a case of exophthalmos due to follicular lymphoblastoma. This patient received a massive dose to the eye through three fields at one sitting. The same day there was a severe reaction about the eye with marked proptosis necessitating enucleation of the eyeball. All their patients with exophthalmos who received the fractional dosage were treated successfully. Only one required a second series of treatments to the eye. In one patient exophthalmos of the right eye occurred several years after the left; both responded promptly to irradiation. The lesions throughout the body responded readily until the terminal stage of the disease, when they became radioresistant. In several instances, radium packs induced regression when roentgen therapy failed.

Annals of Internal Medicine, Ann Arbor, Mich.

G: 717-834 (Dec.) 1932

Manner of Onset in Acute Rheumatic Fever as Seen in New York City. H. Brooks and C. O'Regan, New York.—p. 717.

Observations on Obesity. R. M. Wilder, Rochester, Minn., and Florence H. Smith and Irene Sandford, Chicago.—p. 724.

Insulin in Malnutrition: Further Observations. R. D. Metz, Detroit.—p. 743.

*Carotenemia Associated with Ingestion of Pumpkin: Report of Case. A. C. Curtis and E. E. Kleinschmidt, Ann Arbor, Mich.—p. 751.

*Comparison of Blood Pressure in Men and Women: Statistical Study of Five Thousand Five Hundred and Forty Individuals. M. Wetherly, Minneapolis.—p. 754.

Action of Benzol, Roentgen Rays and Radium on Blood and Blood Forming Organs. E. E. Osgood, Portland, Ore.—p. 771.

Further Study of White Family Showing Elliptical Erythrocytes. W. C. Hunter, Portland, Ore.—p. 775.

*Potassium Sulphocyanate: Note on Its Use for Painful Crises in Sickle Cell Anemia. E. G. Torrance and T. G. Schnabel, Philadelphia.—p. 782.

Assay of Goldenrod as Cause of Hay Fever. W. T. Vaughan and Ruth W. Crockett, Richmond, Va.—p. 789.

*Present Status of Ketogenic Diet. D. S. Pulford, Sacramento, Calif.—p. 795.

Treatment of Cavities in Pulmonary Tuberculosis. L. S. Peters, Albuquerque, N. M.—p. 802.

Chronic Invalidism with Marked Personality Changes Due to Myxedema. J. F. Stoll, Hartford, Conn.—p. 806.

Historic Montreal: Metropolis of Canada and Mother of Cities of the West. Mande E. Abbott, Montreal, Canada.—p. 815.

Carotenemia.—Curtis and Kleinschmidt report a case of carotenemia associated with the ingestion of pumpkin. The pigmented areas were the palms of the hands, soles of the feet, forehead, nasolabial folds, lips, soft palate, inferior surface of the tongue, conjunctivae, abdomen and lumbar regions. The case is illustrative of the extent to which carotenemia can develop from ingestion of a food rich in carotene content over a period of seven months. The blood carotene content at the height of the carotenemia was 1.65 mg. per hundred cubic centimeters of serum, and one month later with a carotene low diet it was 0.075 mg.

Comparison of Blood Pressure in Men and Women.—Wetherly studied the routine blood pressure reading of the 5,540 persons admitted to the medical division of the outpatient department of the University of Minnesota Hospital, from December 1926 to December 1929. His statistical analysis showed an increase in the mean value of systolic and diastolic blood pressure with age, the most marked rise occurring a decade earlier for women than for men. The relative varia-

tion increases over the age period but has a tendency to rise abruptly and remain relatively constant between rises. These rises also occur one decade earlier for women than for men. The absolute variation is greater for women than for men. There is a statistical significant difference in mean value for men and women after 30 to 40 years of age. A statistically significant difference is also shown in the incidence of blood pressure of higher groups for women in comparison with men. The averages for men and women in the higher groups do not show a significant difference. The clinical significance of blood pressure of equal degree must be considered independently in men and women. A given elevated blood pressure is more apt to be benign in nature and, if of pathologic consequence, to run a longer course in women than in men. Hypertension as a cause of death is as frequent in men as in women, even though the incidence of blood pressure at higher levels is significantly greater in women. In the older age groups this difference is partially explained by the shorter course of the condition in men.

Potassium Thiocyanate in Sickle Cell Anemia.—Torrance and Schnabel record their experiences with a Negro male patient, aged 26, who on five successive admissions to the hospital always complained of severe pains in the extremities, back and chest. In their effort to control the patient's abdominal crises they resorted to many drugs and therapeutic endeavors. Ludlum's examination of wet specimens of the patient's blood with dark field illumination showed an unusual degree of erythrocytic clumping. He suggested the trial use of sodium and potassium salts together with potassium or sodium thiocyanate, largely on theoretical grounds. The patient was given large daily doses of potassium citrate and sodium bicarbonate, to which was added 1¼ grains (0.08 Gm.) of potassium thiocyanate three times a day. Four days later this dosage was increased to 2½ grains (0.16 Gm.) three times a day and continued for eleven days. During this time he was entirely free from pain and discomfort and was up and about the ward. He remained free from pain for five days, when he again complained of pain in the shoulders and abdomen. Immediately on receiving the potassium thiocyanate therapy he again experienced a prompt relief of symptoms. During the period of thiocyanate medication, no variations in the number of sickle cells were noted.

Present Status of Ketogenic Diet.—Pulford states that in the ketogenic diet ketosis acts differently physiologically from acidosis caused by a shift in acid-base equilibrium and has other effects than dehydration. The ketogenic diet is still necessary, therefore, in the treatment of epilepsy. In the light of the studies of the last decade, one must consider all epilepsy as symptomatic of organic changes in the central nervous system, and not "idiopathic." Until the "precipitating cause," thought to be some physiochemical state, is discovered, its cure is not possible. The arrest of convulsions is obtained, however, in the majority of cases under controlled conditions of ketosis, sodium chloride-calcium ion balance and water balance. The results reported from the use of the ketogenic diet alone without special attention to the water or mineral metabolism are surprisingly uniform. In about one third of the intelligent, cooperative patients epilepsy can be arrested, another one third are benefited so that they wish to continue with the diet, but one third are not helped. Those who are benefited have only slight lesions. The ketogenic diet stops petit mal definitely in many early cases, dehydration not benefiting these patients. Petit mal is therefore the one phase of epilepsy that may be cured. The modern method of treating epilepsy with a combination of ketogenic diet, dehydration and a shift in the sodium calcium ions arrests convulsions in the majority of cases. A "cure," however, is no nearer now than in 1921, when the ketogenic diet was first introduced. The chief causes for failure are brain tumor, mental deterioration due to chronicity and old age, psychopathic states, and lack of cooperation. The dangers inherent in the ketogenic diet, such as nitrogen, calcium and vitamin deficiency, are controverted by the intake of yeast, viosterol and calcium in sufficient quantities to prevent pellagra, amenorrhea, and negative nitrogen and calcium balance. Fluid restriction permits a mild ketosis without a high degree of cholesteremia formerly found with a severer ketogenic diet. The ketogenic diet has been found a useful adjunct in the treatment of migraine headache,

asthma and urinary infections, and, in the persons who are receiving it, it acts as a prophylactic against the common acute infections of the respiratory tract, such as colds and influenza, as well as against the acute infectious diseases of childhood.

Annals of Otol., Rhinol. and Laryngology, St. Louis

41: 983-1294 (Dec.) 1932

- Papillary Carcinoma of Maxillary Sinus: Report of Case. J. H. Bryan, Washington, D. C.—p. 983.
Histopathology of Larynx Antedating Clinical Evidence of Laryngeal Tuberculosis. F. R. Spencer, Boulder, Colo., and F. Summerill, Philadelphia.—p. 990.
Laryngectomy, Single Stage: Operative Results. H. B. Orton, Newark, N. J.—p. 1018.
*Atypical Facial Neuralgia, a Syndrome of Vascular Pain. T. Fay, Philadelphia.—p. 1030.
*Anatomic Study of Extension of Mastoid Infection into Digastric Muscle and Adjacent Structures. E. F. Ziegelman, San Francisco.—p. 1063.
Recurrent Hoarseness and Aphonia Without Demonstrable Laryngeal Pathology. L. W. Oaks, H. G. Merrill and L. E. Oaks, Provo, Utah.—p. 1079.
Observations on Temporal Bone. G. E. Tremble, Montreal, Canada.—p. 1087.
Clinical Versus Roentgen-Ray Diagnosis of Sinusitis. S. R. Skillern, Jr., Philadelphia.—p. 1096.
Implants in Nasal Deformities: History and Uses. H. L. Pollock, Chicago.—p. 1103.
Noise in Industry: Its Effect on Hearing and on General Health: Review of Literature. H. F. Smyth, Philadelphia.—p. 1108.
Five Preliminary Notes on Nasal Function. A. W. Proetz, St. Louis.—p. 1117.
Red Nasal Septum Syndrome. D. C. Jarvis, Barre, Vt.—p. 1124.
*Relationship of Nasal Sinus Infection to Sydenham's Chorea. R. F. Davis, Portland, Ore.—p. 1130.
Etiology and Treatment of Orbital Infection. C. T. Porter, Boston.—p. 1136.
Ear Manifestations in Diabetes. V. K. Hart, Charlotte, N. C.—p. 1142.
Safety Pin Closer and Staple Point Projector. G. G. Carroll, Rochester, N. Y.—p. 1145.
Cause of Otosclerosis. L. K. Guggenheim, St. Louis.—p. 1149.
*Neoplasms of Nose, Throat and Ear: Carcinoma of Esophagus. J. C. Beck and M. R. Guttman, Chicago.—p. 1183.

Atypical Facial Neuralgia.—Fay points out that chronic attacks of deep, dull, aching pain in the eye, malar region, about the ear and down the neck, worse at night and throbbing in character have been found associated with tenderness to deep pressure over the arterial branches of the neck and head. It has been demonstrated during the acute stage of pansinusitis that pressure over this structure produces pain referred to the eye and into the region of the zygoma, similar to that complained of by the patient. This has served, in doubtful cases, as a means of differential diagnosis between trigeminal and atypical neuralgia. Certain thoracic and visceral disturbances may find a peripheral reference of pain reflexly, through the vagus arc, as this structure supplies sensory fibers by way of the arterial branches to the deep structures of the face, neck, thorax and abdomen. The author concludes that, following the various combinations of sensory, sympathetic, vagal and vascular sheath resections, an analysis of the results (assisted by a process of negative elimination) indicates the existence of three distinct pain mechanisms to the structures of the head, face and neck: (1) superficial pain by way of the trigeminal and cervical branches; (2) deep pain sense transmitted through the sensory branches and connections of the vagus nerve; (3) tenderness and deep pain along the arterial tree through the carotid sheath to the cervical thoracic cord.

Anatomic Study of Extension of Mastoid Infection.—According to Ziegelman, extension of a mastoid infection from the tip cells into the digastric muscle and adjacent structures does occur. It is relatively uncommon, probably because of the excellent type of mastoid surgery that is usually performed at the present time. It must be differentiated from furunculosis, parotitis and parotid abscess. Simple inflammatory extension into the digastric muscle from mastoid infection probably does occur, causing a functional disturbance of this muscle and allied structures. The treatment is surgical by way of the submaxillary approach. The author's method is similar to that described by Mosher. He makes a T-shaped incision along the inferior border of the maxillary bone; the long arm of the T he directs downward along the anterior border of the sternomastoid muscle, exposing the digastric muscle, cautiously avoiding the hypoglossal nerve and locating the pus by sharp dissection if possible, otherwise using Hilton's method.

Nasal Sinus Infection and Sydenham's Chorea.—Davis presents four illustrative cases of chorea associated with sinus infection. The literature of fifty years ago suggests conditions in the nasopharynx as a cause of the disease, but only in the last few years has the relationship of nasal sinus conditions been recognized. The number of chorea patients with sinus infection in Doernbacher Hospital has been 25 per cent of the total number of chorea patients. It is probable that this percentage may be found to be higher as a more careful search for sinus involvement is made. All writers have emphasized that rapid improvement, and often cure, follow prompt and active treatment of the sinus condition. Many urge a rapid elimination of the focus to save the heart. The future may demonstrate that nasal sinus infections have more to do with this disease than is now supposed.

Carcinoma of Esophagus.—Beck and Guttman believe that cervical or retrosternal discomfort in swallowing should be an absolute indication for esophagoscopy, especially if the patient is within the so-called cancer age. In the diagnosis of carcinoma of the esophagus, esophagoscopy is preferred to and must be preceded by roentgenology, and a biopsy performed when pathologic changes are encountered. More may be expected from surgery in carcinoma of the esophagus if the lesion is diagnosed early and is located in the cervical portion. Irradiation, whether by the so-called radium bomb, high voltage roentgen therapy, radon seeds or the actual radium element, is mainly palliative and aids in maintaining a patent esophageal lumen. Intubation is an important palliative measure that makes the patient's existence easier by preventing starvation and thirst and thus obviating gastrostomy. Dilatation is utilized only as a preliminary step to intubation. Gastrostomy is a measure of last resort and utilized only when irradiation and intubation fail to maintain a patent lumen.

Archives of Dermatology and Syphilology, Chicago

27: 1-184 (Jan.) 1933

- *Mercurial Inunctions in Treatment of Syphilis: Excretion of Mercury Following Use of Mild Mercurous Chloride Inunctions: Mode of Absorption of Mercury from Skin. H. N. Cole, H. F. DeWolf, Nora E. Schreiber, T. Soltmann and J. Van Cleave, Cleveland.—p. 1.
Epidermomycosis at University of California: Study III. R. T. Legge and L. Bonar, Berkeley, Calif., and H. J. Templeton, Oakland, Calif.—p. 12.
*Eczema Due to Hypersensitiveness to Rubber: Scientific Study. M. E. Obermayer, Chicago.—p. 25.
*Gold Dermatitis Limited to Depigmented Skin, with Theoretical Consideration of Its Etiology. D. M. Pillsbury and G. V. Kulchar, Philadelphia.—p. 36.
LXII. Meningitis and Dermatitis Caused by New Variety of Blastomycete (Endomycete). C. M. MacBryde and E. I. Thompson, St. Louis.—p. 49.
Psoriasis and Multiple Superficial Epithelioma. C. S. Wright and R. J. Friedman, Lansdowne, Pa.—p. 70.
Keratoderma Disseminatum Palmaris et Plantaris: Its Mode of Inheritance. J. C. Michael, Houston, Texas.—p. 78.
*Roentgen Rays in Treatment of Acne: Evidence That They Do Not Produce Scarring. H. D. Niles, New York.—p. 89.
Experimental Monosporosis. J. A. Gammel and A. R. Moritz, Cleveland.—p. 100.
*Chromoblastomycosis in Texas. S. J. Wilson and S. Hulsey, Fort Worth, Texas, and F. D. Weidman, Philadelphia.—p. 107.

Mercurial Inunctions in Treatment of Syphilis.—Cole and his associates administered to six adult male patients a series of from eighteen to thirty rubs, with a median of thirty rubs. There was one salivation at fourteen days, probably an idiosyncrasy. At the end of four weeks there was a median mercury excretion of but 0.09 mg. and a median fecal excretion of 0.37 mg. The relatively high fecal excretion is probably to be explained as absorption from the fingers by way of the mouth. This low mercury excretion after 50 per cent mild mercurous chloride inunctions may be best compared to that which occurs with 5 per cent metallic mercury inunctions, with which there was a median urinary excretion of 0.15 mg. at the end of four weeks and a median fecal excretion of 0.25 mg. at the end of four weeks. The explanation for the low urinary mercury excretion after 50 per cent mild mercurous chloride inunctions probably lies in the difficulty of rubbing the hard particles of mild mercurous chloride into the hair follicles. Consequently, it is poorly absorbed.

Hypersensitiveness to Rubber.—Obermayer presents the chemistry of the manufacture of rubber and enumerates the substances employed which may give rise to a dermatitis. Studies made on a patient revealed that the hypersensitiveness

was not due to crude rubber, to chemical substances employed in manufacturing rubber goods or to rubber goods themselves. It was therefore assumed that the hypersensitiveness was due to the process of cold-cure vulcanization used in manufacturing. While glove rubber cured with sulphur monochloride gave a positive result, such material cured with substances not containing sulphur monochloride gave a negative result. The chemistry of sulphur monochloride was studied; the probable offending compound was postulated. The similarity of the compound to mustard gas led to the idea of rendering it nonirritant by treatment with alkali. After the chemical experiment had verified the theory, treatment of rubber gloves with a 4 per cent solution of sodium hydroxide was tried. The result was gratifying, and the patient is now able to work with gloves treated with alkali without having dermatitis.

Gold Dermatitis Limited to Depigmented Skin.—Pillsbury and Kulchar review the literature and describe two cases of vitiligo in which a dry papulosquamous dermatitis limited to the depigmented skin occurred following the intravenous use of gold sodium thiosulphate. In one case the presence of gold was demonstrated in the skin from the involved area by the method of Christeller. Microscopic sections showed severe inflammatory changes and numerous minute hemorrhages limited strictly to the papillae and the subpapillary parts. Patch tests with gold sodium thiosulphate were negative, while the intradermal tests were slightly more marked in the depigmented skin. The authors concluded that the photosensitivity of the depigmented patches was not the controlling factor in the development of the gold dermatitis in their cases. A review of the literature emphasizes the multiform character of reactions to gold compounds, the greater frequency of reactions depending on the cumulative effect rather than true anaphylaxis and the marked tendency of gold dermatitis to leave pigmentary remains that may be confined to the exposed surfaces. They observed that available information on the histology of gold dermatitis is not extensive, and they were unable to correlate the reported observations closely with those observed in one of their cases. There seems, however, to be a tendency to limitation of the pathologic changes to the region of the papillae in many cases.

Röntgen Rays in Treatment of Acne.—Niles administered to forty patients an average of twelve and one-half weekly exposures of one-fourth skin unit of röntgen rays on one side of the face and a placebo treatment on the other: the scars were equal on the two sides in thirty-two cases, more pronounced on the untreated side in five, and greater on the treated side in three. The amount of scarring after acne vulgaris depends on the severity and duration of the eruption and the tendency of the patient's skin toward scar formation. This seems to be neither increased nor decreased by röntgen therapy. In nineteen of the forty patients, the untreated side was either entirely cured or almost well and as much improved as the treated side. This may be partly explained by the fact that fewer rays reached the mesial part of the untreated side of the face, owing to the lack of overlapping irradiation from the treated side.

Chromoblastomycosis.—Wilson and his associates observed that an extensive verrucous disease of one leg, of forty years' duration, in a patient from Texas, was referable to a fungus, *Phialophora verrucosa*. The authors' case is the second authentic case reported in the literature. The disease closely resembles tuberculosis verrucosa cutis and Gilchrist's blastomycosis. Histologically, it also resembles Gilchrist's blastomycotic dermatitis, except that the micro-organisms do not bud and are deep brown. *Phialophora verrucosa* was isolated in culture. Injection into white rats invariably induced granulomas, and injection into the testis caseation. The organism was of extremely low virulence; it appeared to be incapable of existing in the viscera or other deep tissues. Experimentally induced lesions remained localized at the sites of lodgment. The histology of the Brazilian, Bostonian and Texan lesions was compared in the original materials sent from those places. In tissue the micro-organisms appeared to be identical. In view of the recovery of *Alternaria* from one of the experimental rats, it is theoretically possible that the organisms from all three places are genetically the same, although not identical in culture.

Archives of Ophthalmology, Chicago

9: 1-164 (Jan.) 1933

- Pathologic Changes in Orbit in Progressive Exophthalmos, with Especial Reference to Alterations in Extra-Ocular Muscles and Optic Disks. H. C. Naffziger, San Francisco.—p. 1.
 Syndrome in Uveal Tuberculosis. W. C. Finnoff, Denver.—p. 13.
 *Production of Pigment in Conjunctiva in Night Blindness, Prexerosis, Xerosis and Keratomalacia of Adults. A. Pillat, Peiping, China.—p. 25.
 Early Grafting in Burns of the Eye. G. B. O'Connor, San Francisco.—p. 48.
 Diagnostic Value of Tests of Light Sense in Early Glaucoma. V. Casten and Dorothy J. Shaad, Boston.—p. 52.
 Morgagnian Cataracts and Their Complications: Report of Case of Spontaneous Rupture of Lens Capsule Causing Secondary Glaucoma. S. I. Kaufman, Chicago.—p. 56.
 Detachment of Retina: Guist Operation and Report of Cases. H. S. McKeown, New York.—p. 64.
 Dystrophia Adiposa Corneae. D. Katz and P. A. Delaney, Chicago.—p. 78.

Production of Pigment in Conjunctiva.—Pillat states that in China a characteristic pigmentation of the conjunctiva appears in night blindness, prexerosis corneae, xerosis epithelialis and keratomalacia of adults in the various stages of vitamin A deficiency. The intensity of pigmentation varies greatly in different cases and at the different zones of the conjunctiva. It is most marked in the lower fornix, first in the circular fold, then in the plica, the conjunctiva of the lower half of the bulbus, the lower lid, the upper half of the bulbus and, finally, the upper fornix and upper lid. On histologic examination, the conjunctival fissure shows a varying amount of pigment, usually corresponding to the stage of vitamin A deficiency. The entire pigment is produced in the epithelium of the conjunctiva by the conjunctival cells. There are two types of pigment-producing cells, the dendritic cells or melanoblasts. The dendritic cells appear first in vitamin A deficiency, and later the pigment caps in the other epithelial cells are formed. In advanced cases of long duration, almost every epithelial cell contains a considerable amount of pigment. The conjunctival hyperpigmentation, which is formed because of vitamin A deficiency, disappears gradually along with the healing of the other clinical symptoms by the administration of cod liver oil, but the pigmentation is the last symptom to disappear. The long duration of pigmentation in the conjunctiva after the acute condition is over makes it possible sometimes to determine the etiology of a leukoma adherens or of a staphyloma corneae as a sequela following vitamin A deficiency.

California and Western Medicine, San Francisco

38: 1-72 (Jan.) 1933

- *Friedman Test for Pregnancy. L. G. McNeile and P. A. Reynolds, Los Angeles.—p. 1.
 Wassermann-Fast Syphilis. M. W. Hollingsworth, Santa Ana.—p. 8.
 Peptic Ulcer: Its Clinical Aspects: Report of Cases. F. A. Speik, Los Angeles.—p. 12.
 Life Insurance Examinations. T. G. Dabney, San Francisco.—p. 16.
 Gallbladder and Duct Diseases. H. Shoemaker, Los Angeles.—p. 22.
 Eczema: Present Day Concepts. E. D. Chipman, San Francisco.—p. 27.
 *Bismuth Therapy in Syphilis: Dermatologic and Medical Aspects. H. E. Alderson, San Francisco, and S. Ayres, Jr., Los Angeles.—p. 30.
 Some California School Economics. A. F. Gillihan, San Luis Obispo.—p. 34.

Friedman Test for Pregnancy.—McNeile and Reynolds state that the Friedman test has an accuracy of about 98 per cent, which parallels that of the Aschheim-Zondek test, and that it determines the presence of live placental tissue or tissue of placental origin in contact with the maternal circulation. It may therefore give false negatives in the presence of missed abortions, incomplete abortions, or ectopic pregnancies with dead fetal tissue. The reaction might be positive in the case of a macerated fetus, as the placenta in these cases frequently contains live tissue. The test is strongly positive in the presence of hydatid mole and chorio-epithelioma, and quantitative Aschheim-Zondek tests become an important aid in the diagnosis, treatment and prognosis of these conditions. Attention has recently been called to the fact that primary ovarian failure or castration of the human being may cause a compensatory anterior lobe hypertrophy which may throw an excess of anterior lobe hormone into the circulation, thus accounting for a certain number of false positive reactions. The technic that the authors suggest is the use of a fresh specimen of urine, with two injections of 7 cc. each on successive days, using a carefully controlled rabbit not under 12 weeks of age and killing the animal at forty-eight hours. If greater speed is needed,

two rabbits should be injected, as suggested by Schneider, one killed early, and, if negative, the second at forty-eight hours. A catheterized specimen of urine procured by a responsible person is desirable.

Bismuth Therapy in Syphilis.—According to Alderson and Ayres, during the past ten years bismuth has been used widely and in some clinics exclusively in the treatment of syphilis. Reports from many quarters and based on observations in many thousands of cases confirm the value of bismuth in its rapid spirocheticidal effects, its ability to heal syphilitic lesions in all stages of the disease, its prompt effect on the serologic reactions and its relatively low toxicity. Three main types of bismuth are available: the insoluble suspensions, the oil soluble and the water soluble. All three types have their special fields of usefulness. Those who base their choice on the insoluble preparations advance the theory that, because of the slow absorption, depots of bismuth are formed at the site of injection from which a gradual but prolonged absorption of the metal into the system takes place, and that by reason of this slow absorption a better therapeutic effect is obtained. Those who favor the water soluble preparations advocate giving the injections more frequently and claim that by reason of the rapid absorption a greater spirocheticidal effect is to be anticipated. Between these extremes stand those who regard the liposoluble preparations as combining the advantages of the other two types. Bismuth should always be injected intramuscularly, never intravenously. It should be given in courses of from ten to twenty injections once or twice a week, depending on the type of bismuth used.

Canadian Public Health Journal, Toronto

23: 553-596 (Dec.) 1932

- Veneral Disease Situation in Canada: Information and Recommendations Regarding Control of Veneral Disease in Canada Arising out of Regional Conferences of Clinicians Working in Special Clinics. F. S. Parney, Ottawa, Ont.—p. 553.
Maternal Mortality. H. B. van Wyk, Toronto.—p. 562.
Use of Hydrocyanic Acid for Fumigation Purposes. C. L. Williams, Rosebank, Staten Island, N. Y.—p. 567.

Journal of Biological Chemistry, Baltimore

99: 1-322 (Dec.) 1932. Partial Index

- Is There an Unknown Compound of Nature of Calcium Citrate Present in Blood? D. M. Greenberg and L. D. Greenberg, Berkeley, Calif.—p. 1.
Modification of Stoddard and Drury Titrimetric Method for Determination of Fatty Acids in Blood Serum. Evelyn B. Man and E. F. Gildea, New Haven, Conn.—p. 43.
Antirickettic Potency of Eggs from Hens Receiving Massive Doses of Activated Ergosterol. F. G. McDonald and O. N. Massengale, Evansville, Ind.—p. 79.
Changes in Phosphoric Ester Content of Red Blood Cells and Liver in Experimental Rickets. H. D. Kay, Toronto, Canada.—p. 85.
The α -Benzoinone Test for Cysteine. W. C. Hess and M. X. Sullivan, Washington, D. C.—p. 95.
Effect of Anticoagulants on Determinations of Inorganic Phosphate and Protein in Plasma. O. H. Gaebler, Detroit.—p. 89.
Relationship Between Muscle Creatine and Creatinine Coefficient. A. Chanutin and F. W. Kinard, University, Va.—p. 125.
Chemical Studies on Parathyroid Hormone. W. R. Tweedy and M. Torigoe, Chicago.—p. 155.
Studies on Vitamin G (B₂), with Especial Reference to Protein Intake. H. C. Sherman and I. A. Derbigny, New York.—p. 165.
Two New Color Tests for Hexoses. J. H. Foulger, Cincinnati.—p. 207.
Method for Determination of Monosaccharides in Presence of Disaccharides and Its Application to Blood Analysis. H. Tauber and I. S. Kleiner, New York.—p. 249.
Iron and Copper in Liver and Liver Extracts. A. E. Meyer and C. Eggert, Rockford, Ill.—p. 265.

99: 323-662 (Jan.) 1933. Partial Index

- *Elimination of Bromides from Blood Stream. J. W. Palmer and H. T. Clarke, New York.—p. 435.
*Use of Metal Cages in Study of Nutritional Anemia. Gladys B. Geraghty, F. Aline Underhill, J. M. Orten and R. C. Lewis, Denver.—p. 451.
*Cobalt in Animal Nutrition. F. J. Stare and C. A. Elvehjem, Madison, Wis.—p. 473.
*Studies on Animal Diastases: IV. Effect of Insulin on Diastatic Activity of Blood in Diabetes. E. Reid and V. C. Myers, Cleveland.—p. 607.

Elimination of Bromides from Blood Stream.—According to Palmer and Clarke, bromide replaces chloride to an equal extent in blood cells and plasma. The kidneys excrete chloride preferentially over bromide. The ratio of the fraction of bromide in total halide in the blood to that in the urine is constant during constant chloride intake. When the chloride intake is raised, this ratio also rises. With a chloride intake

of about 0.5 mm. a day per kilogram of body weight, this ratio has a value of about 0.4; with eighteen-fold chloride intake, the ratio rises to about 0.7. Bromide excretion is not affected by changes in urinary volume produced by dosage with urea.

Metal Cages in Studies of Nutritional Anemia.—Geraghty and her associates produced nutritional anemia by feeding whole milk to rats housed in glass cages, old galvanized iron wire cages and new galvanized iron wire cages, respectively, at essentially the same rate. Purified ferric chloride when added to an exclusive milk diet did not cause regeneration of hemoglobin in anemic rats kept either in old or in new metal cages. These results are completely in accord with the authors' repeated observations on rats in glass cages. Galvanized iron wire cages appear to be as suitable as their glass cage for nutritional anemia studies.

Cobalt in Animal Nutrition.—Stare and Elvehjem outline a method for the estimation of cobalt in biologic materials. It is applicable to samples containing from 0.01 to 0.5 mg. of cobalt. The results obtained when this method was applied to a few biologic substances are given. The entire body of rats fed a milk, iron, copper and manganese diet was found to contain less than 0.01 mg. of cobalt. Definite amounts of cobalt were found in all rats fed a similar diet plus cobalt, and the quantity present was proportional to the amount fed. The presence of from 0.04 to 0.05 mg. of cobalt in the entire body of a rat was sufficient to produce a decided polycythemia. No cobalt was detected in tissues taken from pigs fed a milk, iron, copper and manganese diet, but definite quantities were detected in practically all the tissues taken from pigs fed a similar diet plus cobalt.

Effect of Insulin on Diastatic Activity of Blood.—Reid and Myers report that the diastatic activity of the blood in normal persons varies between 13 and 19 (Myers-Killian method). In diabetic patients, receiving dietetic but not insulin treatment, the diastatic activity of the blood is almost invariably higher than normal. In these cases, also, there appears to be some correlation between the blood sugar and the blood diastase. In insulin-controlled diabetic patients the diastatic activity of the blood generally approximates the normal. It is suggested that the diastase while in the blood plays no part in carbohydrate metabolism, and that it is only when, in the presence of insulin, it is recalled into the liver cells that it exerts its enzymatic function with regard to the dextrose-glycogen reaction.

Journal of Comparative Psychology, Baltimore

14: 297-451 (Dec.) 1932

- Relative Food Preferences of White Rat. P. T. Young, Chicago.—p. 297.
Effect of Inanition on Maze Learning in White Rat. F. L. Ruch.—p. 321.
Device for Making Records of Observations of Behavior More Precise. Ruth Wendell Washburn, New Haven, Conn.—p. 331.
Further Studies of Effect of Incidental Stimuli on Maze Learning with White Rat. J. R. Patrick and A. C. Anderson.—p. 335.
Reproductive Reactions of Sex Mosquitoes of Parasitic Wasp, *Habrobracon Juglandis*. P. W. Whiting, Pittsburgh.—p. 345.
Central Nervous Mechanism for Emotional Responses: I. Some Limitations of Previous Investigations with Suggestions for Further Experimental Work. C. W. Brown, San Francisco.—p. 365.
Study of Orientation in Rat. N. R. F. Maier, Ann Arbor, Mich.—p. 387.
The "Emotion" of Disgust in Dogs. A. H. Maslow, Madison, Wis.—p. 401.
Cannibalism in Dogs. E. S. Girden.—p. 409.
Amount of Motility of Seventy-Three New-Born Infants. O. C. Irwin, Iowa City.—p. 415.
Distribution of Amount of Motility in Young Infants Between Two Nursing Periods. O. C. Irwin, Iowa City.—p. 429.

Journal of Nervous and Mental Disease, New York

77: 1-120 (Jan.) 1933

- Improvement in Nervous and Mental States Under Cortin Therapy. F. A. Harman, G. M. Beck and G. W. Thorn, Buffalo.—p. 1.
Thrombosis of Superior Cerebral Vein. D. B. Davis, Philadelphia.—p. 22.
Intravenous Pharmacodynamic Study of Autonomic Nervous System in Cryptogenic Group of Convulsive States. J. Notkin, New York.—p. 27.
Surgical Relief of Headache of Migraine. D. G. Dickerson, Seattle.—p. 42.
Scoliosis Produced by Spinal Cord Tumor: Case. S. S. Allen and E. A. Kahn, Ann Arbor, Mich.—p. 53.

Journal of Nutrition, Springfield, Ill.

G: 1-112 (Jan.) 1933

- Continual Cornified Vaginal Cells as Index of Avitaminosis-A in Rats. S. B. D. Aberle, New Haven, Conn.—p. 1.
- Standards for Predicting Basal Metabolism: I. Prediction for Girls from Seventeen to Twenty-One. Marian E. Stark, Madison, Wis.—p. 11.
- Parallel Determination of Respiratory Quotient and Alveolar Air of Man in Postabsorptive Condition. T. M. Carpenter and R. C. Lee, Boston.—p. 37.
- Effect of Glucose and Fructose on Human Respiratory Quotient and Alveolar Air. T. M. Carpenter and R. C. Lee, Boston.—p. 55.
- Comparison of Apricots and Their Carotene Equivalent as Sources of Vitamin A. Agnes Fay Morgan and Evelyn O. Madsen, Berkeley, Calif.—p. 83.
- Copper, Iron and Manganese Content of Fish. T. B. Parks and E. R. Rose, Burlington, Vt.—p. 95.
- Vitamin A Content of Yellow-Tissued and White-Tissued Apples. Myra T. Potter, Pullman, Wash.—p. 99.

Journal of Urology, Baltimore

29: 1-120 (Jan.) 1933

- Urea Clearance Test in Urology. V. J. Harding and R. W. T. Urquhart, Toronto, Canada.—p. 1.
- Some Experimental Work on Site for Ureteral Transplant. J. K. Ormond, Detroit.—p. 15.
- Acute Ureteral Obstruction. N. F. Ockerblad, Kansas City, Mo.—p. 29.
- Ureteral Granuloma. H. G. Hamer, H. O. Mertz and W. N. Wishard, Jr., Indianapolis.—p. 43.
- *Combined Psychiatric and Urologic Study of Sexual Impotence. L. B. Hohman, Baltimore, and W. W. Scott, Rochester, N. Y.—p. 59.
- *Urologic Aspects of Sexual Impotence. A. L. Wolbarst, New York.—p. 77.
- Sperm Storage Function of Seminal Vesicles. H. W. Beams and R. L. King, Iowa City.—p. 95.
- Uretero-vesical Cyst. E. L. Young, Jr., Boston.—p. 99.
- Hernia into Female Bladder. F. J. Cushman, Lansing, Mich.—p. 107.
- *Acquired Renocolic Fistula: Report of Case. R. W. Barnes, Los Angeles.—p. 111.
- Presentation of Cystoscopic, Irrigating, Fulgurating Attachment for Author's Cautery Punch. J. R. Caulk, St. Louis.—p. 117.

Psychiatric and Urologic Study of Sexual Impotence.—Hohman and Scott summarize the outcome of their study by saying that there are four types of causes which lead to interference with normal sex function: (1) the organic urologic disease, (2) physiologic inferiority, (3) purely psychologic disturbances and (4) a combination of organic urologic disease and psychologic disturbances. They present cases illustrating the interrelation of these types of causes, and they are convinced that for men in the prime of life the psychologic (and often physiologic) causes are the most important ones. While they attempt to specify what constitutes adequate organic etiology, they stress the fact that this type of etiology is more frequently the starting point rather than the cause for the continuation of impotence. Their study extending over a period of years has convinced them that it is only by this combined method of approach to the problem that one can offer patients the type of treatment to which they are entitled. One cannot emphasize too strongly the need for careful and informed consideration and study, if one wishes to save the sex lives of these patients from dangerous if not irreparable damage.

Urologic Aspects of Sexual Impotence.—In a study of 300 cases of male impotence, Wolbarst observed that 44 per cent gave a history of previous gonococcal infection usually involving the adnexa; 27 per cent practiced "withdrawal" for from three to twelve years; 14 per cent admitted excessively frequent intercourse in their early years; 5 per cent admitted frequent and long continued masturbation for periods varying from four to fifteen years; 5 per cent admitted a history of ungratified sexual desire for from five to seventeen years; 3 per cent gave unmistakable evidence of endocrine dysfunction, and 2 per cent presented evidences of psychic disturbance. Gonorrhea and abnormal sex life constitute the most frequent causes of impotence. Urethroscopically, pathologic changes were observed in 89 per cent of the patients with a gonorrheal history and in 77 per cent of the nongonorrheal patients with a history of abnormal sex living. Seminal vesiculitis was the invariable common factor observed in all cases, regardless of previous history. A pathologic condition in the posterior urethra is not the cause of the impotence but reflects the primary pathologic condition existing in the vesicles. Treatment must be accorded to all possible etiologic factors, but especially to the vesiculitis and the urethral changes. In the vast majority of cases, vasotomy is probably the most effective single therapeutic measure for the vesiculitis and the impotence.

Prognosis is generally good if all etiologic factors are accorded appropriate treatment. Appreciable improvement to complete cure was attained in 77 per cent of the author's series.

Acquired Renocolic Fistula.—Barnes states that a search of the literature did not reveal a case of renocolic fistula. He reports a case which resulted from a neglected calculous pyonephrosis rupturing into the ascending colon. Diagnosis was made by the pyelogram showing the escape of the pyelographic fluid into the cecum. Nephrectomy and closure of the opening into the cecum was successfully accomplished. The author's case emphasizes the importance of earlier urologic study in cases with continued pyuria. It also adds another interesting condition to the list of sequelae of neglected pyonephrosis.

Kansas Medical Society Journal, Topeka

34: 1-42 (Jan.) 1933

- Göiter. C. S. Newman, Pittsburg.—p. 1.
- Allergy and Its Relationship to Rhinologist. C. T. Moran, Arkansas City.—p. 6.
- Reducing Substances in Urine. K. L. Druet, Salina.—p. 9.
- Message from President of the American Medical Association. L. H. Cary, Dallas, Texas.—p. 14.
- Mental Cancer. R. W. Robb, Osawatomie.—p. 18.

Military Surgeon, Washington, D. C.

72: 1-92 (Jan.) 1933

- Training of Medical Units in Gas Warfare. G. L. McKinney.—p. 1.
- Trichophytosis. W. L. Wilson.—p. 11.
- Inguinal Hernia. H. P. Makel.—p. 20.
- Malaria and Military Medicine During Conquest of Algeria. By Commander Medical Corps Hamet, translated by W. H. Michael.—p. 24.
- Detomid Method of Controlling Inoperable Hemorrhage. J. F. Baldwin.—p. 34.
- *Undulant Fever Treated with Mercurochrome: Case Report. M. L. Todd.—p. 37.
- Military Service and Its Relation to Tuberculosis Control. J. S. Fernando.—p. 40.
- Standardize Our Operating Pavilions. H. W. Jones.—p. 44.

Undulant Fever Treated with Mercurochrome.—Todd reports in detail a case of an undiagnosed fever of low grade with loss of weight, intense headache, lumbar pain, fugitive pains in the arms, injected conjunctivae, increased knee jerks and an increase in the small mononuclear cells. The patient made no improvement under rest cure and forced feeding but responded at once to an injection of 10 cc. of a 1 per cent solution of mercurochrome. The change was so marked that there was no doubt in his mind as to what caused it. The author has previously reported two cases of undoubted Malta fever in which the response to mercurochrome was equally sudden.

New England Journal of Medicine, Boston

208: 1-56 (Jan. 5) 1933

- *Management of Acute Inversion of Puerperal Uterus, with Especial Reference to Early Diagnosis, Manual Reposition and Report of Ten Cases. E. d'Errico, Boston.—p. 1.
- Radiation in Operable Cancer. D. Quick, New York.—p. 8.
- Responsibility of Medical Men in Control of Cancer. B. T. Simpson, Buffalo.—p. 11.
- Health Education in the City of Boston. Ruth I. Parsons, Malden, Mass., and C. E. Turner, Cambridge, Mass.—p. 19.
- Nail Changes in Pulmonary Tuberculosis. S. S. Hanflig, Boston.—p. 27.
- Caudal Anesthesia in Urology. R. A. Harpin, Boston.—p. 31.
- Minority Reports of Committee on the Costs of Medical Care. N. B. van Etten, New York.—p. 33.
- Scientific Method in Motor Vehicle Administration. C. S. Slocombe, London, England.—p. 35.

208: 57-112 (Jan. 12) 1933

- Treatment of Cancer of Prostate. G. G. Smith, Boston.—p. 57.
- Pharmacology of Digitalis in Relation to Therapy of Heart Disease. H. A. Christian, Boston.—p. 66.
- Relationships Between Emotional States and Organic Disease. M. Frenont-Smith, Boston.—p. 69.
- Considerations on Protein and Salt Therapy in Various Types of Bright's Disease. A. M. Butler, Boston.—p. 71.
- Pneumothorax Treatment in Tuberculosis. E. J. Rogers, Pittsford, Vt.—p. 78.
- Health Education in the City of Boston: III. Health Education in Boston Public Schools. Ruth I. Parsons, Malden, Mass., and C. E. Turner, Cambridge, Mass.—p. 81.

Acute Inversion of Puerperal Uterus.—According to d'Errico, acute inversion of the puerperal uterus is more common than one is led to believe. This accident may happen in well supervised clinics and in competent hands. Hemorrhage, pain and surgical shock are the principal symptoms and

examination will disclose the uterus in the vagina, the fundus being replaced by an indentation, a cupping or a crater. An effort should be made to emphasize the importance of this complication in medical schools and to the medical profession at large, in regard both to its early recognition and to the technic of manual replacement. Manual replacement will usually be successful if the condition is recognized early. Abdominal replacement following Huntington's technic should be the method of choice in cases in which efforts at manual reposition should not be attempted, but the abdominal route should be chosen. In the chronic type of inversion the better approach is by the vaginal route following Spinelli's operation for the clean cases, whereas vaginal hysterectomy should be the choice in the presence of sepsis.

New Orleans Medical and Surgical Journal

85: 481-570 (Jan.) 1933

- Radium and the Menopause. L. J. Williams, Baton Rouge, La.—p. 481.
Adequate Health and Medical Service to All the People All the Time, Basic Factor in Community Health, Wealth and Happiness. P. M. Payne, Napoleonville, La.—p. 483.
Roentgenographic Visualization of Liver and Spleen as Aid in Differential Diagnosis of Tumors of Abdomen. C. J. Tripoli, E. Haam and E. B. Lehmann, New Orleans.—p. 487.
Ragweed Situation in Southern States. O. C. Durham, North Chicago, Ill.—p. 492.
Chronic Appendicitis. W. W. Robinson, Memphis, Tenn.—p. 497.
Acute Conditions of Female Pelvis and Lower Abdomen. R. J. Field, Centreville, Miss.—p. 503.
Important Facts Regarding Prevention and Treatment of Diphtheria. J. A. Milne, Jackson, Miss.—p. 507.
Tonsillectomy by Fractional Electrocoagulation: Advantages and Disadvantages of Diathermy in Otolaryngology. G. B. Collier, New Orleans.—p. 515.
Some Common Ear Diseases. D. E. Staton, Columbus, Miss.—p. 520.
Control of Troublesome Cough in Pulmonary Tuberculosis by Use of Combined Bacterial Antigens with Extract Anterior Pituitary: Preliminary Report. E. A. Bertucci, New Orleans.—p. 525.
Responsibility of the Public for Its Own Death Rate. J. L. Levy, Clarksdale, Miss.—p. 528.

Northwest Medicine, Seattle

32: 1-44 (Jan.) 1933

- *Chronic Microcytic Anemia: Its Relationship to Menstrual Disturbances and Achlorhydria. C. B. Wright, Minneapolis.—p. 1.
Brain Abscess. D. G. Dickerson, Seattle.—p. 8.
Intractable Facial Pain: Relief by Deep Injections of Alcohol. A. J. McLean, Portland, Ore.—p. 16.
Evaluation of Vertigo Following Head Injuries. A. B. Murphy, Everett, Wash.—p. 25.
Lymphosarcoma: Case Report. C. V. Rugh, Klamath Falls, Ore.—p. 28.
*Further Studies and Experiences with Transfixion Suture Technic (Technic 3) for Transplantation of Ureters into Large Intestine. R. C. Coffey, Portland, Ore.—p. 31.

Chronic Microcytic Anemia.—Wright states that proper medicinal treatment will improve, often remarkably, but does not cure the chronic microcytic anemias. Achlorhydria is a minor contributing factor. Nevertheless, patients with achlorhydria and chronic anemia should be taken more seriously and they should demand special attention to their diet and general care. Menstrual disturbances are the important factor in the so-called microcytic hypochromic anemias and should receive first consideration in the treatment of these cases. His study of 250 patients and a review of the literature indicate that in these chronic anemias in women in late menstrual life, when no other cause can be found, a subtotal sterilization is an entirely justifiable procedure and is effective in the cure of the anemia.

Technic for Transplantation of Ureters.—Coffey transplanted ten ureters by the transfixion suture technic in six children for exstrophy of the bladder, without failure or serious consequence of any kind. While this operation is seemingly simple, there are certain points that are vital to the success of the operation: 1. The transfixion suture must penetrate the lumen of the ureter. 2. The transfixion suture must penetrate the intestinal mucous membrane. 3. The transfixion suture must be tied tight enough to cut through all the tissues in its bite. 4. The ligated stub end of the ureter should be anchored by a separate catgut suture to the muscular and peritoneal coats of the intestine. Notwithstanding the simplicity and apparent freedom from danger of the transfixion suture operation as applied in children with exstrophy of the bladder, the author still favors the operation of transplantation of the ureters by the tube technic in all cases of cancer of the bladder, vesicovaginal fistula and other indications found in adults, for the reason that the transplantation operation is completed at a

single sitting. Moreover, in men with cancer of the bladder it is possible to do the cystectomy at the same operation also. He has had no deaths in adults following this operation except in cases of advanced cancer of the bladder, all of which deaths were reported in the *British Journal of Urology* in December, 1931.

Ohio State Medical Journal, Columbus

29: 1-72 (Jan.) 1933

- Abdominal Surgery in Children. N. W. Gillette, Toledo.—p. 23.
Migraine-Like Headache Due to Allergy. J. Forman, Columbus.—p. 25.
Ophthalmic Manifestations of Otic Disease. M. F. McCarthy, Cincinnati.—p. 31.
*Tularemia: Summary of Recent Researches, with Consideration of One Hundred and Three Dayton Cases. W. M. Simpson, Dayton.—p. 35.
Intracapsular Operation of Cataract: Survey of Fifty Years' Experience. J. W. Wright, Columbus.—p. 41.

Tularemia.—According to Simpson, during the past five years tularemia has rapidly assumed the position of an important public health problem. Its widespread prevalence in North America, together with reports of its existence in Norway, Sweden, Russia, Japan and England, indicates that the disease is probably world wide in its distribution. Newly discovered animal hosts and insect vectors indicate the ever widening spread of the disease and further insure its perpetuation. While the wild rabbit remains the most important source of infection for other animals and man, many new sources of human infection have been described. The 103 cases of tularemia encountered by the author represent the largest number of cases to be reported from such a circumscribed area. The clinical manifestations of the disease are distinctive and are not easily confused with any other disease. The agglutination test is highly specific. The goat antitularense serum, developed by Foshay, gives promise of providing a reliable specific therapeutic agent against tularemia. The intravenous injection of about 10 cc. of the antitularense serum on two successive days resulted in an abrupt cessation of fever, malaise, chills, sweats, arthralgias and myalgias, within forty-eight hours after the second injection. There also occurred a rapid reduction in the volume of the involved lymph nodes to an average of one half of their former diameters.

Philippine Islands Med. Association Journal, Manila

12: 599-660 (Dec.) 1932

- Observations Bearing on Question of Whether or Not Chaulmoogra-Group Drugs Have Any Special Action in Leprosy: I. Changes in Leprotic Skin Lesions Following Intradermal Injections of Various Oily Preparations. C. B. Lara and M. Lagrosa, Cullion.—p. 599.
Changes in Anesthesia Following Antileprotic Injections of Iodized Hydnocarpus Wightiana Ethyl Esters. M. Lagrosa, Cullion.—p. 604.
Medical Ethics from Army Officer's Point of View. K. Nelson, Manila.—p. 611.
Observations on Incidence of Pleurisy as Found at Autopsy, with Especial Reference to Pulmonary Tuberculosis. J. L. Ignacio, Cullion.—p. 614.
Pharmacist and Physician. E. D. Aguilar, Manila.—p. 622.
My Experiences as Puericulture Center Physician. L. Gamboa, Silay.—p. 624.
Florentio Natividad, Alias Flor Intrencherado. J. A. Fernandez, Rizal.—p. 627.

Philippine Journal of Science, Manila

49: 483-688 (Dec.) 1932. Partial Index

- Determination of Organic Matter in Accumulator Sulphuric Acid Solutions. R. G. Myers, Cavite.—p. 581.
Avian Malaria Studies, VII: Plasmodium as Prophylactic Drug in Sporozoitic Infections of Avian Malaria. P. F. Russell, New York, and A. M. Nono, Manila.—p. 595.
Id.: VIII: Bleeding Time in Canaries; Normal and in Malaria. P. F. Russell, New York.—p. 627.
Effect on Culex Larvae of Paris Green Diluted with Charcoal and Notes on Feeding Habits of Culex Quinque-Fasciatus Larvicide Studies, V. P. F. Russell, New York, and A. P. West, Manila.—p. 651.

Puerto Rico J. Pub. Health & Trop. Med., San Juan

8: 99-254 (Dec.) 1932

- Clinical Aspect of Schistosomiasis Mansoni. R. Girges, Tanta, Egypt.—p. 99.
Alexin Fixation and Agglutination Test in Brucella Infections. P. Morales-Otero and G. Monge, San Juan.—p. 193.
Report of Studies of 1932 Epidemic of Influenza in Puerto Rico. O. Costamandry, P. Morales-Otero and J. Suárez, San Juan.—p. 205.
Some Observations of Antimosquito Screening and Screening Materials. W. C. Earle, Des Plaines, Ill.—p. 227.
Ultraviolet Light Intensity in Puerto Rico: II. L. G. Hernández, San Juan.—p. 249.

Radiology, St. Paul

20:1-68 (Jan.) 1933

- New Application of Flat Bucky Grid to Any Angle, with Especial Reference to Sinus Work. P. F. Cole, Springfield, Mo.—p. 1.
- Leontiasis Ossea. E. Freedman, Cleveland.—p. 8.
- Transient K. V. P. and R Output from Air-Cooled Therapy Tube. M. J. Gross, Chicago.—p. 14.
- *Investigation of Gaseous Decomposition Products of Roentgen-Ray Films. Grace Ballard, Milwaukee.—p. 18.
- Absorption Curves and Spectra of Roentgen-Ray Beams. A. Mutscheller, New York.—p. 32.
- *Pathology of Monomelic Flowing Hyperostosis or Melorheostosis. E. Kraft, New York.—p. 47.

Gaseous Decomposition Products of X-Ray Films.—

A consideration of the results obtained in her investigation leads Ballard to the conclusion that cellulose acetate films are superior to nitrocellulose films, from a safety standpoint, for the following reasons: 1. Cellulose acetate films are more stable than nitrocellulose films. The latter readily decompose at 150 C., while acetate films must be kept at a high temperature in order to obtain decomposition. 2. Much larger amounts of gases are evolved from the flameless combustion of nitrocellulose films than from cellulose acetate films. Decomposition of the former is much more complete in a limited air supply, as nitrate films contain a large amount of oxygen compared to acetate films. 3. Hydrocyanic acid is liberated in smaller quantities from acetate films than from nitrocellulose films. The oxides of nitrogen are entirely absent from the gases liberated from acetate film. Carbon monoxide, as shown by other investigators, is the only toxic gas liberated in comparable quantities from both types of film.

Monomelic Flowing Hyperostosis, or Melorheostosis.

—Melorheostosis is a flowing hyperostosis of a single extremity. In preference to other terms, Kraft proposes the name "monomelic flowing hyperostosis." He reviews the cases that have been described in the literature and states that four additional cases, not reported as yet, have been seen in the United States. In the early cases, the hyperostotic flow is confined to isolated parts of an extremity (circumscribed flow). In the advanced cases, the flow is either interrupted or continuous (interrupted flow, complete, and partial continuous flow). A disturbance of other parts of the body has never been definitely proved. Microscopically, the tissues do not present specific features. The disease is slowly progressive, but it may become stationary in the early, as well as in the late, stage for many years. The symptoms are rheumatic pain and limited motion of joints. In most cases the complaints are vague, and ankylosis of joints may cause relatively little concern. Only by roentgen examination can diagnosis be made. Occasionally, curving deformities of the fingers are sufficiently characteristic to cause one to suspect the disease prior to roentgen studies. The causation is still unknown, though the clinical features point toward a congenital nature. The lesions, although resembling other bone diseases, represent a separate entity and are benign in character.

Southern Medical Journal, Birmingham, Ala.

25:1197-1286 (Dec.) 1932

- "We Owe a Cock to Aesculapius." L. J. Moorman, Oklahoma City.—p. 1197.
- Diagnosis and Treatment of Sinusitis. F. E. Hasty, Nashville, Tenn.—p. 1202.
- *Diagnosis and Treatment of Intestinal Amebiasis. C. F. Craig, New Orleans.—p. 1207.
- Urinary Diseases of Pregnancy. H. W. E. Walther, New Orleans.—p. 1213.
- Urologic Speculations. R. A. Hennessey, Memphis, Tenn.—p. 1216.
- Relation of Diet to Heart Disease. C. S. Burwell, Nashville, Tenn.—p. 1217.
- Progress in Obstetrics. W. B. Anderson, Nashville, Tenn.—p. 1219.
- Antepartum Hemorrhage: Premature Separation of Placenta as Prominent Cause. E. L. King, New Orleans.—p. 1222.
- Has the Surgical Pendulum Swung Too Far in Obstetrics? E. P. Allen, Oklahoma City.—p. 1224.
- *Common Errors of Obstetric Practice. H. T. Best, Shreveport, La.—p. 1225.
- Dihydranol in Treatment of Chronic Intestinal Toxemia. A. Eustis, New Orleans.—p. 1231.
- Some Unexpected Effects of Small Doses of Drugs. C. Reynolds, Milwaukee.—p. 1233.
- Marriage of Syphilitics. E. R. Hall, Memphis, Tenn.—p. 1235.
- Neurology in Medical Curriculum. Carrol C. Turner, Memphis, Tenn.—p. 1238.
- The Individual in Medical Teaching. K. M. Lynch, Charleston, S. C.—p. 1240.
- Double-Plane Fluoroscopy as Aid in Bronchoscopy: Report of Case. M. Euen, Atlanta, Ga.—p. 1242.

- Kinks in Colon: Their Significance and Management. M. Smith, Miami, Fla.—p. 1244.
- Lymphosarcoma: Case Report. May Owen, Fort Worth, Texas.—p. 1248.
- Present Status of Midwifery in Florida. H. Hanson and Lucile Spire Blachly, Jacksonville, Fla.—p. 1252.
- Methods for Increasing Efficiency of Sanitation Inspectors. C. R. Keiley, Richmond, Va.—p. 1258.
- Public Health Program in Factories of Mississippi: Plans for Future Development. J. W. Dugger, Jackson, Miss.—p. 1263.

Diagnosis and Treatment of Intestinal Amebiasis.—

Craig states that, since the diagnosis of intestinal amebiasis must rest on the demonstration of *Endamoeba histolytica* in the feces of the suspected individual, it is important that the physician be familiar with the symptoms and physical observations usually associated with the various types of the infection. If it is impossible to examine the feces for the ameba, and a serologic laboratory is available, the complement fixation test for amebiasis should be employed in diagnosis. The general treatment of amebiasis in those suffering from diarrheal or dysenteric attacks consists of rest in bed and attention to the diet and general physical welfare of the patient. If the dysenteric symptoms are acute, it is best to withhold all food for two or three days, and if food is given it should consist of barley water, egg albumin, milk with lime water and thin broths. When the acute symptoms subside, poached or soft boiled eggs, soft puddings, and thick gruels may be given, and as the patient improves a light soft diet may be substituted. During convalescence a full diet is gradually resumed, but extreme care is necessary to avoid foods that are known to irritate the intestine. Alcoholic drinks should be forbidden to all persons who have symptomatic amebiasis, as even in carriers excessive indulgence in alcohol often results in the appearance of the symptoms of diarrhea or of dysentery. Tonics are useful in convalescence and if patients are living in the tropics or subtropics a change to a cool climate often results in marked and rapid improvement, especially in those who have had repeated dysenteric attacks.

Common Errors of Obstetric Practice.—According to Best, the mistakes that are probably the most commonly made and the most serious to the pregnant woman are: (1) the use of solution of pituitary to induce labor, during the first and second stages of labor; (2) operating before complete dilatation of the cervix; (3) failure to make a complete diagnosis; (4) allowing a perineum to tear rather than doing an episiotomy; (5) failure to realize the indications for prophylactic forceps, or improper application of forceps; (6) vaginal examinations; (7) failure of the attending obstetrician to use some form of analgesia during labor; (8) failure to realize the indications for cesarean section, and (9) standardization of obstetric practice and fees.

Wisconsin Medical Journal, Madison

31:822-887 (Dec.) 1932

- Transphrenic Infection. H. L. Beye, Iowa City.—p. 829.
- Punch Prostatectomy. H. C. Bumpus, Jr., Rochester, Minn.—p. 831.
- Renal Tuberculosis in Children. W. M. Kearns and S. M. Turkeltaub, Milwaukee.—p. 834.
- Calcium Deficiencies in Pregnancies and Its Influences on the Child. H. A. Sincok, Superior.—p. 838.
- Acute Substernal Pain. R. C. Cantwell, Shawano.—p. 842.
- Injection Treatment of Internal Hemorrhoids. G. G. Stebbins, Madison.—p. 845.

32:1-67 (Jan.) 1933

- Management of Disorders of Menopause. E. L. Sevringhaus, Madison.—p. 9.
- Tribrom-Ethanol as Anesthetic in Eye Surgery. F. A. Davis, Madison.—p. 14.
- Roentgenologic Findings in Nontuberculous Lesions of Hip. R. P. Potter, Marshfield.—p. 19.
- Psychology in Practice of Medicine. G. R. Duer, Marinette.—p. 21.
- Squamous Cell Carcinoma of Gallbladder. S. B. Pessin and J. Deau, Madison.—p. 24.

Yale Journal of Biology and Medicine, New Haven

5:201-300 (Jan.) 1933

- Factors Controlling Movement of Fluid Through Human Capillary Wall. E. M. Landis, Philadelphia.—p. 201.
- Some Clinical Aspects of Accessory Lobes of Human Lungs. W. B. Soper, West Haven, Conn.—p. 227.
- Present Status of Our Knowledge of Vitamins. A. H. Smith, G. R. Cowgill, R. W. Jackson and W. E. Anderson, New Haven, Conn.—p. 235.
- Working Hypothesis for Experimental Study of Cancer. R. Dodge, New Haven, Conn.—p. 269.
- End-Results in Treatment of Carcinoma of Rectum and Rectosigmoid. A. W. Oughterson, New Haven, Conn.—p. 271.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Anaesthesia, Manchester,

10: 47-90 (Jan.) 1933

- Study of French Methods of Anesthesia. Madame Flexer-Lawton.—p. 48.
Modern Aids to Anesthesia. C. F. Hadfield.—p. 62.
Anesthesia for Intra-Oral Surgery. D. S. Middleton.—p. 74.

British Journal of Radiology, London

6: 1-64 (Jan.) 1933

- Radium as Therapeutic Agent: Case for National Control. A. H. Lee.—p. 7.
Neutron and Its Properties. J. Chadwick.—p. 24.
Presidential Address. F. L. Hopwood.—p. 33.
Fractures of Upper End of Femur in the Aged. J. N. Jacobson.—p. 39.

Lancet, London

1: 1-64 (Jan. 7) 1933

- Psychotherapy in General Practice. R. D. Gillespie.—p. 1.
Modern Conception of Nephritis: Its Bearing on Certain Problems of Life Assurance. T. I. Bennett.—p. 8.
*Anatomy of Asthma as Disclosed by Lipiodol Investigation. J. B. Christopherson.—p. 11.
Radiographic Diagnosis of Prostatic Enlargement. N. Ross.—p. 14.
*Slipping of Epiphysis of Head of Femur: Its Relation to Renal Rickets. J. F. Brailsford.—p. 16.
Facial Palsy and Infection with Zoster Virus. R. S. Aitken and R. T. Brain.—p. 19.

Iodized Poppy-Seed Oil Investigation in Asthma.—In Christopherson's opinion, examination by iodized poppy-seed oil is the correct procedure for all asthmatic persons over the age of 10 years. Iodized poppy-seed oil, being chemically and physiologically almost inert, is not a bronchial irritant and seldom precipitates a paroxysm. But, to anticipate any exacerbation during the process of injection and to control the bronchial reflex, 10 minims (0.6 cc.) of epinephrine 1:1,000 is given to the asthma patient hypodermically immediately before the oil is injected. The injection is a procedure that requires a little practice. The author injects it by way of the cricothyroid membrane, using a 0.5 per cent solution of procaine hydrochloride intradermally as a local anesthetic; he introduces 7½ minims (0.45 cc.) of a 5 per cent solution of cocaine into the (adult) larynx to abolish the cough reflex. The injection is given slowly with a curved trocar and cannula. The oil makes its way by gravity along the bronchial tree; if too much is given it may occupy the whole lumen of the tube and cause collapse of the lung, wholly or in part, or imperfect distribution is likely to ensue. Iodized poppy-seed oil makes its way not only by gravity but also by diffusion, spreading equally over the whole inner surface of the tube. The maximum dose for an adult is about 20 cc. More than this is apt to get into the alveoli, especially if the patient coughs and overcomes the sphincter action where the bronchiole becomes alveolus, or if there is frank emphysema. If the alveoli are injected, the bronchi will be obscured. For a child, from 3 to 5 cc. is enough. The few accidents that occur in iodized poppy-seed oil injections are due to improper technic. Provided there is no spasm of the bronchial muscles, the radiopaque oil penetrates with remarkable freedom into the minutest ramifications of the bronchial tree and if there is spasm of the bronchial muscles, or if there is spasm in a particular area of lung, it will not penetrate. Most of the oil is coughed up; some may be coughed up and swallowed, when it will pass the stomach unaffected by gastric juice but, coming in contact with the lipase of the pancreatic juice, it is broken up and some, seldom serious, iodine intoxication may ensue.

Slipping of Epiphysis of Head of Femur.—Brailsford states that slipping of the epiphysis of the head of the femur in adolescents is due to disorganization of the metaphyseal tissue, which destroys its capacity to withstand the static strains or the trauma to which the normal joint is subjected without harm. Renal rickets is the cause of this disorganization of the metaphysis in some cases and should be excluded before any operative measures are adopted. A roentgenogram of renal rickets is almost diagnostic; the changes may be seen in only one joint. Consolidation and repair of the metaphyseal tissue in renal rickets may be seen by roentgen examination to take place in as short a time as one month. The urine of

all patients showing slipped epiphysis should be examined on several occasions for albumin. The roentgen appearance of the bones in renal rickets is to some extent an index of the renal condition.

Practitioner, London

129: 641-740 (Dec.) 1932

- Allergy and Some Allergic Diseases. W. L. Brown.—p. 641.
Classification and Nomenclature of Mental Disorders. R. D. Gillespie.—p. 665.
Some Legal Aspects of Mental Disease. T. S. Good.—p. 674.
Blood Pressure in the Psychoses and Psychoneuroses. C. W. J. Brasher.—p. 692.
Habits in Infancy. W. Sheldon.—p. 702.
Modern Treatment of Epilepsy. F. McLaughlin.—p. 711.
Muscle Strain and Muscle Weakness. W. E. Tucker.—p. 715.
Nutritive Value of Wines and Beers. W. F. Christie.—p. 721.
Recovery from Septicemia with Pneumonia, Pericarditis and Myocarditis Complicating a Case of Rheumatic Fever: Case Report. V. C. Cornwall.—p. 728.

130: 1-112 (Jan.) 1933

- *Influenza. H. M. Fletcher.—p. 1.
Association of Gastro-Intestinal Diseases with Winter Weather and with Influenza. A. H. Douthwaite.—p. 15.
Acute Bronchitis. C. B. Levick.—p. 23.
*Fibrositis and Muscular Rheumatism. C. W. Buckley.—p. 29.
Institutional Influenza: Epidemic and Endemic. G. E. Friend.—p. 37.
*Treatment of Squint. A. F. MacCallan.—p. 48.
Some Chronic Prostatic Diseases: Their Symptomatology and Treatment. C. J. Marshall.—p. 55.
*Pyloric Incoordination. D. Levi.—p. 67.
Some Practical Suggestions for Dealing with Everyday Psychologic Problems in Child Life. F. H. Dodd.—p. 78.
*Carbon Dioxide Baths in Cardiac and Circulatory Disorders. R. Baumstark and T. Deglmann.—p. 90.
Catarrhal Jaundice. F. Ind.—p. 97.
Thyroid and Potassium Permanganate Treatment of Furunculosis. W. A. Ball.—p. 101.

Influenza.—Fletcher emphasizes that great care must be taken in the treatment of influenza after the fever has subsided. Relapses are common and a mild initial attack may be followed by a dangerous relapse. A useful rule is that, after the temperature has fallen, the patient should be kept in bed for as many days as the duration of the fever. An attack is often followed by general debility, depression of spirits and insomnia, which may persist for months. Should signs of cardiac involvement be present, the period of absolute rest must be prolonged. It may be advisable to continue the administration of digitalis in reduced doses for some weeks except in cases with a slow pulse. When the patient is able to get about, every precaution must be taken to avoid overexertion either mental or physical. He should not be allowed to resume his ordinary occupation until he has completely recovered. A change of scene and climate, especially a visit to the seaside, may do much to restore health of mind and of body. Tonics are indicated, such as iron, arsenic, strychnine and quinine.

Fibrositis and Muscular Rheumatism.—Buckley considers that spa treatment is perhaps the most effective of all measures in chronic muscular rheumatism. The regimen of rest and regulated mode of life with the skilled use of baths, massage and douches will often clear up the most obstinate cases when all other methods have failed. Colonic lavage, which is a feature in many spas, is of great value, whether or not constipation is a factor in the case. Whether the spa to be selected is of the thermal radioactive, the sulphur, or the saline group will be largely determined by the general constitutional type and also the wishes of the patient. There are definite advantages claimed for every kind of spa, and sometimes one succeeds where another fails.

Treatment of Squint.—MacCallan insists that in squint it is not merely approximate parallelism of the eyes which is aimed at by the surgeon but also good vision in each eye, with ability to judge depth, which is the third degree of binocular vision. Nevertheless, it must not be supposed that one's hopes are always realized. As regards actual danger to the eye after a squint operation, the author has never seen an eye lost, as the result of sepsis, in an experience of thirty years. The type of operation to be performed on patients with convergent squint varies with the degree of squint and with the degree of abduction of the squinting eye that can be effected when it is pulled outward with forceps. In small degrees of squint, a tightening up of the external rectus muscle or advancement may be indicated. In large degrees of squint in which full abduction of

the squinting eye is impossible, it is necessary to set back the ocular attachment of the internal rectus by recession. The old operation of subconjunctival tenotomy is no longer carried out, as it is a blind operation, the results of which cannot be foretold. In cases of divergent squint, the operation is usually advancement of the internal rectus muscle. While there is no doubt that greater success attends the treatment of squint when it is undertaken during early childhood, operation on adults who have convergent or divergent squint has great cosmetic value. In some cases great improvement of vision may be effected, and even occasionally binocular vision may be acquired, though this is rare. In conclusion, the author reminds all medical men whose practice brings them in contact with young children of the great importance of getting under skilled treatment at the earliest possible moment all cases of squint which persist after the first few months of life. In the majority of cases, if this is done the possibility of partial blindness of the squinting eye and the necessity for operation are avoided.

Pyloric Incoordination.—Levi believes it is a great mistake to speak of stenosis at all in explaining so-called congenital pyloric stenosis. Of all the innumerable patients examined post mortem, he has never seen a case of true stenosis of the sphincter opening, even though the hypertrophy on the gastric side may have been enormous. A sphincter is either shut or open—it is never in the half-way position. Failure of the stomach to empty itself is not due to stenosis. It is due to the failure of the sphincter to relax. Instances in which there is obstruction immediately after birth are in the author's experience rare, although the obstruction soon becomes manifest owing to failure of acquisition of the normal reflex. Many infants at birth do suffer from abnormality of their reflexes. Some reflexes are slow to appear. For instance, the esophageal reflex may be underdeveloped. Difficulty is then experienced in persuading the child to swallow. Assuming a late development of the reflex which opens the pylorus, it does not require a wide stretch of imagination to visualize an imperfectly balanced mechanism which would send the pylorus into spasm and which would subsequently lead to hypertrophy of the muscle. Development of muscle occurs rapidly in infants. This assumption explains how food is enabled to trickle through the pylorus during the first few weeks of life, and how it is held back in the stomach only when the muscle has become spastic and subsequently hypertrophic. This theory also brings into line two separate conditions that have been described, pyloric spasm and pyloric stenosis. Pyloric spasm in infants appears to be but an early manifestation of so-called pyloric stenosis. Some infants with pyloric spasm develop their normal gastric reflex and get well spontaneously; in others, the reflex is late in appearing and the muscle hypertrophies. They thus become examples of pyloric stenosis. Instances have occurred in premature children. The fetus may drink liquor amnii, and there is no logical reason why, in some rare instances, the pylorus should not hypertrophy before birth, being stimulated to do so by the abnormal peristalsis set up as a result of the ingested fluid. Pyloric spasm and pyloric stenosis may then be results of this underdevelopment of the gastric duodenal reflex, and the two lesions should be classified together as examples of pyloric incoordination. An examination of postmortem specimens reveals that the stomach is dilated and hypertrophied. Many of the stomachs have a capacity of more than 5 ounces. The muscle of the whole stomach is thickened, and this thickening is greatest at the pylorus. The duodenum is normal and the transition from the hypertrophic pylorus to the normal duodenum is sudden. In hardened specimens the pylorus, when viewed from the duodenum, looks like the os uteri externum, and it has a fornix of duodenal mucosa around it. The importance of this area has been emphasized by Browne, who regards it as a dangerous area when the incision is made to relieve the stenosis. This area is a zone of sudden transformation from hypertrophic muscle of the pylorus to the normal musculature of the duodenum. This fact should be borne in mind when operating on patients suffering from this condition, but other than this the zone has no material significance. Infants who succumb to this lesion become extremely emaciated, but apart from this the rest of the body appears to be normal.

Carbon Dioxide Baths.—Baumstark and Deglmann point out that auxiliary physical methods of the treatment of cardiac and circulatory disorders have been widely developed during the past twenty years or so and, in the aggregate, are often

more important and more effective than drugs. Among these measures are rest in bed, suitable variation between rest and light work, and limitation of food and drink; and the former practice of venesection has come into favor again. But first among the methods of physical treatment known both to the medical attendant and to patients, in Germany at least, is the carbon dioxide bath. The value of these baths has long been vigorously discussed, chiefly because their use was mainly empirical, experimental data about their exact action being scanty. A scientific foundation for this form of treatment has now been built up. Although many problems still await solution, knowledge of its scope and limitations has now been so far defined that the mode of action of carbon dioxide baths was sufficiently important to be selected as the main subject of discussion at last year's balneological congress in Germany. In the sixties of the last century, Beneke of Marburg began the treatment of cardiac patients on an extensive scale with the Nauheim springs, which had previously been employed as brine baths for rheumatic and gynecologic conditions; subsequently Schott, Bode and the elder Groedel undertook the first scientific researches on these baths and their action. Nauheim and carbon dioxide treatment soon became well known in "heart cases," but Mackenzie criticized the Nauheim treatment, the results of which he had observed in numerous patients, stating that he had never seen successful results from baths of any description, or observed in patients who had visited Nauheim any beneficial effects that might not have been achieved by treatment elsewhere. He coined the expression "Nauheim wrecks" for patients who returned from Nauheim in a worse condition than when they went. The reason for his opinion is now clear; he stated that the claims of the spa physicians were contradictory and that there was no individualization of treatment. At that time not only was balneotherapy expected to achieve the impossible but it was also employed in conditions in which it would do far more harm than good. Cardiac conditions, now considered absolutely to contraindicate baths, were at that time the chief field of their use.

Quart. Bull., Health Org., League of Nations, Geneva

1: 489-761 (Dec.) 1932

*General Principles Governing Prevention of Tuberculosis. E. Burnet. —p. 489.

System of Grading Milk in United States of America. G. S. Wilson. —p. 664.

Recommendations Regarding Serologic Syphilis Tests: Report Adopted by Health Committee at Its Nineteenth Session (October 1932). —p. 712.

Third Analytic Review of Reports from Pasteur Institutes on Results of Antirabies Treatment. A. G. McKendrick.—p. 725.

Prevention of Tuberculosis.—According to Burnet, the prevention of tuberculosis is a function of social hygiene and may include therapeutic measures, which have a prophylactic value. Tuberculosis mortality has begun to decline in practically all the civilized countries as a result of the progress in civilization. Special treatment (collapse therapy, rest cures, chrysotherapy) cures a certain number of patients, arrests disease in a still greater number and reduces case mortality. Preventive vaccination with BCG is innocuous, according to the data so far available. The most powerful social factors are housing, nutrition and education. Underfeeding promotes tuberculosis. Extra meals for school children who need them, with a well balanced diet and an adequate amount of vitamins, are a powerful factor in prevention. The home is a factor in spreading contagion, if it houses a case of open tuberculosis, and in its effect on general health and on the resistance of the individual to diseases. Education includes the inculcation of better habits of living with a view to improving the health both of the individual and of the community. It is necessary that medical students should be given instruction in tuberculosis, and it is also desirable that special courses be provided for the training of medical specialists and supplementary training courses for medical practitioners, medical specialists and visiting nurses. In the political and administrative framework the state is responsible for the technical direction and supervision of institutions. Social insurance for the protection of work, the worker's health and security is one of the most powerful adjuncts in the campaign against tuberculosis. The state should encourage cordial relations and technical and financial cooperation between the authorities responsible for the insurance organization and those responsible for the pre-

vention of tuberculosis. Public assistance should be designed to subserve the purposes of preventive medicine and social hygiene. The dispensary, the instrument *par excellence* of social hygiene, is the pivot of tuberculosis prophylaxis. The results of treatment, the ever increasing number of stabilized cases and of persons able to return to social life, necessitate the organization of postsanatorium assistance in institutions connected with dispensaries and sanatoriums. These institutions can hardly be expected to be self supporting; they should receive some part of the funds allocated to the campaign against tuberculosis.

Chinese Medical Journal, Shanghai

46: 1071-1158 (Nov.) 1932

Statistics and Medical Research. P. G. Edge.—p. 1071.

*Transient Complete Heart Block with Adams-Stokes Attacks and Normal Auriculoventricular Conduction Between Attacks. S.-N. Cheer and T.-K. T'ang.—p. 1081.

Venoclysis. J. M. Rogers.—p. 1088.

Cholera Bacteriemia in Case of Typhoid Fever. C.-C. Ling.—p. 1092.

Carcinoma of Cervix Uteri Invaded by Endamoeba Histolytica. S. W. Lee.—p. 1096.

Chemical Studies of Mottled Enamel and Brown Stain. J. F. McIntosh, G. Montelius and Y. C. Ma.—p. 1099.

Ocular Neoplasms Among Chinese: Brief Clinicopathologic Report of Eighty-Two Cases with Discussions. W. P. Ling.—p. 1104.

Transient Complete Heart Block.—Cheer and T'ang present electrocardiographic records of a patient with the Adams-Stokes type of epilepsy due to transient ventricular standstill in a heart with normal conduction and mechanism between attacks. The epileptiform attack was caused by complete heart block for thirteen seconds with ventricular silence for three and a half seconds. There was a prolongation of the relative duration of the systole immediately after the ventricular stoppage. Immediately after the attack, conduction was normal; but subsequently the time was slightly prolonged. The patient made a rapid clinical recovery. The authors discuss the mechanisms involved. They believe that their patient's auriculoventricular conduction was impaired as the result of infection.

Gynécologie et Obstétrique, Paris

27: 1-96 (Jan.) 1933

Spinal Anesthesia in Operative Obstetrics. P. Delmas.—p. 1.

Blood Platelets and Puerperium. Laffont and Sirjean.—p. 8.

Ovarian Autograft with Conservation of Uterus in Treatment of Grave Salpingo-Ovaritis. G. Cotte and P. Colson.—p. 16.

*Transplantation of Endometrium. M.-G. Serdukoff.—p. 33.

*Inconveniences and Contraindications of Hysterosalpingography. P.-E. Morhardt.—p. 47.

Transplantation of Endometrium.—In the opinion of Serdukoff, the endometrium possesses an endocrine function as well as one of external secretion. Its functions are menstruation, linking with the chain of endocrine glands, formation of lipoids and formation of ferments. The endometrium has great vitality and resistance, which facilitates its transplantation. The author has performed the transplantation of endometrium from one woman to another in three cases of amenorrhea with destruction of the endometrium and obliteration of the uterine cavity; in a case of a grave symptomatic syndrome following the menopause he has made a transplant of endometrium accompanied by an ovarian graft. Restitution of the menstrual function was obtained in the first three cases, and in the fourth the distressing symptoms disappeared, the nervous condition of the patient was improved, and it is possible that the menstrual function may return. The author thinks that transplantation of the uterine mucosa is indicated in prolonged amenorrhea and sterility caused by atrophy or total absence of the endometrium, resulting from infectious inflammations, dissecting metritis, too energetic curettage or cautery. The presence of normal ovaries is necessary for the success of transplantation. Atrophy and disappearance of the endometrium secondary to castration or premature menopause should be treated by transplantation of the endometrium associated with transplantation of the ovaries. In these cases transplantation must be repeated till the endocrine equilibrium of the organism is restored. The technic of the operation consists in incision of the uterus along the median line of the anterior wall, extirpation of all the cicatricial tissue (after the permeability of the cervical canal has been ascertained) and implantation of several fragments of endometrium, freshly removed from another woman, into the uterine wall, where they are fixed by suture to the muscle or

grafted into the incision of the muscle. The uterine wall is then closed with two sutures. Catheterization and dilation of the uterus is advised two weeks after the intervention and from time to time thereafter.

Contraindications of Hysterosalpingography.—Morhardt reviews the literature relative to the risks of hysterosalpingography under the headings of chemico-toxic, mechanical and infectious accidents. The reactions grouped under chemico-toxic accidents usually result from the injection of too large doses of iodized oil and include inflammatory reactions and iodism. The best way to establish the correct dosage is by roentgenologic control of the filling of the uterus and its evacuation. The chief mechanical accidents are ruptures of the tract, and they are most to be feared in cases of tubal pregnancy, uterine cancer, uterine fibroma and atrophy of the uterus. They can be avoided in most cases by using a manometer and not exceeding a pressure of from 200 to 250 mm. of mercury. Fat embolism constitutes another mechanical accident, and its occurrence depends not only on high pressure but on the permeability of the endometrium. According to some authors, the injection of iodized oil may produce abortion in case of recent pregnancy. Infectious complications usually result from the reactivation of a previous infection. To avoid these complications, aseptic precautions should be taken (uterine infection frequently exists even if the seropurulent content of the tubes is sterile), and the intervention should take place at a time distant from the menstrual period and only when all inflammatory symptoms have disappeared. Some authors think that the intervention can disturb the function of the tubes by producing an irritation or inflammation of the tubal mucosa which either prevents the ascent of spermatozoa or the descent of the ova, in the latter case favoring ectopic pregnancies.

Policlinico, Rome

40: 243-282 (Feb. 13) 1933. Practical Section

*Contribution to Constitutional Status Lymphaticus. S. Calabrese.—p. 243.

Endocranial Echinococcus Cyst of Pia Mater. A. Businco.—p. 248.

Autopsytherapy in Empyema of Infants. G. Rosa Malizia.—p. 268.

Constitutional Status Lymphaticus.—Calabrese discusses the genesis of status lymphaticus and states as his own opinion that persons with this condition belong in the category of robust beings, because the lymphatic tissue acts as a defense mechanism against infection. He observes that, despite the defensive tissue, most patients with lymphatic disorders are susceptible to infection. This he attributes to a constitutional deficiency in reaction to stimuli through a retarded metabolism. He states that lymphatic patients generally have a slow metabolism either because of their youth, which is the usual time for the appearance of signs of lymphatism, or because during their embryonic stage there was a prevalence of the endodermic leaf, according to De Giovanni, producing more stroma and less parenchyma, on account of an inferior degree of differentiation of the original cell layers. In explaining erethistic lymphatism the author states that the continuous infections that produce hyperfunction of the lymphatic tissue, and the slow metabolism that gives rise to its excessive nourishment, create an increase of the lymphatic tissue and therefore the picture of lymphatism.

Archiv für klinische Chirurgie, Berlin

174: 1-208 (Feb. 2) 1933

*Gas Gangrene and Its Treatment. G. Effkemann.—p. 1.

*Diverticulosis of Colon and Its Complications. R. Bumm.—p. 14.

Experimental Joint Inflammation in Young and in Grown Up Animals. T. Nakamura.—p. 32.

Influencing Sugar Metabolism by Operative Means. Y. Komatsu.—p. 65.

Symptomatology of Myxoglobulosis of Appendix. H. Margulies.—p. 99.

Eden's Reconstruction Operation for Posterior Dislocation of Shoulder Joint. W. Zahn.—p. 107.

Symptoms and Diagnosis of Retroperitoneal Conditions Not Associated with Urinary Organs. H. Viethen.—p. 116.

Morphologic Changes in Wrist Joint After Removal of Os Lunatum. H. Dieterich.—p. 146.

Changes in Cranial Bones in Meningiomas. J. Wienbeck.—p. 151.

Stieda's Shadows on Inner Aspect of Femoral Condyles. R. Andresen.—p. 162.

Pathogenesis of Nonspecific Diseases of Spongiosa of Bones. W. Block.—p. 172.

Gas Gangrene.—Effkemann was able to collect from the clinics of Berlin for the period from 1928 to 1931 thirty-four cases of gas gangrene infection ending in recovery and nineteen cases ending fatally. In his experiments with mice and guinea-

pigs he found that contamination of an incision with garden soil yielded other pathogenic anaerobes besides *Bacillus welchii*, which was found in every experiment. The parasympathetic anthrax bacillus was present in 48 per cent, and *B. fallax* in 38 per cent. Besides these he was able to cultivate a number of unidentified anaerobes capable of producing a disease picture of their own. When incisions were left open, *B. welchii* failed to develop an infection. The same was not true of the para-anthrax bacillus or of *B. novyi*. These were much more toxic and more readily activated than *B. welchii*. The author's experimental studies with the new anti-gas gangrene serum prepared by the firm of Behring point to the efficacy of polyvalent serums. Because *B. welchii* was found in all his clinical cases, the author felt that this component should be higher than it is in the new serum or that a monovalent serum should be used instead. He considered the antianthrax antitoxic component in the new serum not sufficiently effective. Surgical solution of chlorinated soda and potassium permanganate proved most useful as antiseptics in his clinical cases.

Diverticulosis of Colon.—According to Bumm, most diverticula of the large intestine are not true diverticula. The principal factors in the production of diverticula are the increased intra-abdominal pressure, caused principally by constipation, and abnormally wide openings in the intestinal wall for the passage of blood vessels. Both conditions are apt to be present in elderly obese persons. Diverticulosis is much more frequent than is generally believed. The colon of possibly every third person past 50 is the seat of one or more diverticula. The descending colon and the sigmoid are the seats of predilection. Symptoms are the result of complications and not of diverticulosis only. Of particular significance are the infectious processes in connection with diverticula. The acute infections develop on the convex surface of the intestine and give rise to symptoms of appendicitis or, in the case of perforation into the free peritoneal cavity, of peritonitis. The chronic infections involve the root of the mesentery of the large intestine and lead to the formation of inflammatory stenosing tumors, which are difficult to differentiate from a malignant growth. The mild chronic cases are to be treated medically. The acutely inflamed, the malignant transformation and the stenosing tumefaction demand surgical intervention. The best results are obtained by resection of the portion of the bowel that is the seat of diverticulosis. The author reports six cases and emphasizes the variability of the clinical picture.

Deutsche medizinische Wochenschrift, Leipzig

59: 241-278 (Feb. 17) 1933

- Present Status of Chemical Research on Vitamins. A. Scheunert.—p. 241.
So-Called Traumatic Fractures. F. Kehrer.—p. 244.
Hemorrhages in Puerperal Women. V. Schilling.—p. 247.
Experiences with Malignant Tumors in General Hospital. E. Haase and J. Wittke.—p. 249.
Meningitis in Children Caused by Influenza-Like Bacilli. P. von Gara.—p. 252.
Lead Poisoning and Gastric Ulcer. A. Peipers.—p. 254.

Hemorrhages in Para-Esophageal Hernias.—Schilling reports three cases of displacement of the stomach in the hiatus esophageus and reviews two other cases. The displacements were of the type designated as "para-esophageal hernia," in which there exists an intussusception of parts of the stomach besides the esophagus into the pleural cavity. All five cases demonstrate the great significance of hiatus hernias for the pathogenesis of chronic hemorrhages produced by incarceration, gastric ulcer and eventually carcinoma. The vagueness of the symptoms and the severity of the anemic manifestations led several times to an incorrect diagnosis of pernicious anemia and to liver therapy, the more so since megalocytes were observed and since the gastric symptoms seemed to indicate a gastrogenic origin. However, roentgenoscopy revealed the true nature of the disorder, by showing the displacement of a part of the stomach into the thorax. Moreover, a careful study of the blood pictures revealed the secondary character of the anemia that was the result of hemorrhage. The author points out that two of the patients, in addition to the other symptoms, exhibited the syndrome designated by von Bergmann as "epiphrenal" or "gastrocardial." One of the patients was at first treated for heart disease. The author thinks that with the greater exactness of the diagnosis of gastric disorders, which is made possible by roentgenoscopy, the forms of hiatus

hernias described by him will be more frequently recognized. He emphasizes that because of the possibility of an erroneous diagnosis, and because an early recognition makes surgical cure possible, these hernias should be given consideration by the internist.

Meningitis and Influenza-Like Bacilli.—Von Gara describes two cases of meningitis in children, aged 6 months and 3½ years, respectively. The cases are noteworthy because rod-shaped organisms were found, which resembled Pfeiffer's influenza bacillus. The gram-negative rods differed from the typical Pfeiffer influenza bacilli mainly in that culture was possible (particularly in one case) in mediums free from hemoglobin. To be sure, the viability of the cultured bacilli was extraordinarily slight and further cultivation soon became difficult even in mediums containing hemoglobin. The cultured bacilli were not pathogenic for animals (rabbits, guinea-pigs and white mice). Extensive serologic studies were impossible on account of the great sensitivity of the organisms and of the fulminant course of the disease. However, in the first case the bacillus was agglutinated by the homologous serum of the patient in a dilution of 1:50. The simultaneous occurrence of pneumococci in the second case does not impair the pathogenic significance of the gram-negative influenza-like rods, for it has been observed by others that in cadavers the Pfeiffer influenza bacilli usually are accompanied by pneumococci. The author points out that these two cases corroborate the formerly reported observation that there is no connection between influenza bacillus meningitis and influenza epidemics, for these two cases were observed during June and July of 1932, when there was no influenza epidemic.

Lead Poisoning and Gastric Ulcer.—Peipers desires to call attention to the fact that lead colic and spastic constipation are not the only reaction of the gastro-intestinal canal during chronic lead poisoning, but that there is also a tendency for spastic conditions with involvement of the vascular system of the upper portions of the digestive tract. On the basis of a clinical history, he shows that lead poisoning may produce the conditions that lead to the development of gastric ulcer.

Deutsche Zeitschrift für Chirurgie, Berlin

239: 1-240 (Jan. 30) 1933. Partial Index

- *Blood Transfusion. H. Bürkle-de la Camp.—p. 1.
Experimental Studies with Inhibition of Iso-Agglutination by Warmth and Its Relation to Blood Transfusion. H. Lützel.—p. 18.
*Influence of Anatomic Characteristics on Localization in General Sepsis. W. Schulze.—p. 34.
Effect of Weather on Occurrence of Embolism and Perforation of Gastric Ulcers. F. Scheidter.—p. 107.
Studies on Question of Pulmonary Ligament. W. Schulze.—p. 127.
Histologic Studies of Electrocoagulation of Pulmonary Tissue. H. Zschau.—p. 150.
Constriction of Esophagus in Cervical Spondylitis Deformans. W. Büssem.—p. 229.
Pathology of Duodenal Diverticulum. A. Lob.—p. 234.

Blood Transfusion.—Bürkle-de la Camp points out that occasional occurrence of untoward results and even death may follow blood transfusion despite blood grouping and direct testing. Faulty grouping, and changes in the agglutinating property after the test has been made, as well as the high agglutination titer of the donor's serum, are possible causes. Physicochemical changes of colloidal character taking place in the blood of the recipient as the result of the morbid process from which he is suffering contrasted with the colloidal state of the blood of the normal donor may likewise account for otherwise unexplainable reactions. The biologic testing can be depended on when the serologic method is not available. The author sees an additional safeguard in crossed serum-erythrocyte testing just before the transfusion. The experience in Lexer's clinic does not support the view that anaphylactic phenomena are likely to follow the use of the same donor for repeated transfusions. Because they have no professional donors, it was necessary to resort to the use of donor patients with minor illnesses. Most striking results were obtained with transfusions in acute hemorrhages. It likewise proved to be the most effective means of treating chronic parenchymatous bleeding and the various conditions characterized by delayed blood coagulability. A pronounced detoxifying effect was observed in poisoning by various gases when blood transfusion was administered following removal of blood by venesection. The author calls attention to the use of small, oft repeated transfusions in

acute surgical infections, particularly in general infections. The patients felt better and reacted more vigorously, and the fever as a rule declined from twelve to twenty-four hours later.

General Sepsis.—Statistical studies from Lexer's clinic in Munich show that there were 365 cases of general sepsis among the 60,000 patients treated during the last ten years. Schulze found that the spread of infection was influenced both by the extent of the original focus and by localization. The larger the original infection, the more likely was the invasion of the general circulation. Infections about the face were likely to become generalized because of the rich blood and lymph supply. The most frequently involved organ in general sepsis was the liver, but the infection rarely proceeded to abscess formation. Next in frequency was the spleen. It was found enlarged in 151 of the 365 cases of sepsis. Abscess formation, however, was here likewise infrequent. In order to determine what anatomic features determined localization as well as resolution or, on the other hand, abscess formation, the author studied the effect of muscular contractions on the venous pressure in a freshly amputated human leg. He found that muscular contractions caused a temporary fall in the venous pressure and thought that these fluctuations facilitated the localization within them of infected matter. He injected a mixture of india ink into the veins of rats and observed that localization in the capillaries of different organs varied as to both the amount and the manner. It depended apparently on the anatomic differences in the capillaries. Three varieties of capillaries were distinguished: (1) wide, with slow circulation and the closest resemblance to the reticulo-endothelial system (capillaries of the liver, spleen, bone marrow and lymph nodes); (2) elongated, convoluted, inconstant as to their width and much less closely related to the reticulo-endothelial system, as seen in the lungs and kidneys, and (3) elongated, narrow, least related to the reticulo-endothelial system (capillaries of muscles, the periosteum and the brain). The ink was found in a finely divided form within the capillaries of the first group. Rapid and effective breaking up of the foreign material and its removal by lymph and blood vessels were in evidence. The capillaries of the second variety were seen to be completely blocked by ink emboli in places. The breaking up of the foreign material, however, was in evidence even here. In the third variety, massive blocking with ink emboli with little evidence of removal was noted. Analysis of numerous cases of general sepsis emphasizes the significance of these observations as regards the matter of localization in blood infections. Organs with wide capillaries and a close resemblance to the reticulo-endothelial system are always involved in blood infections. However, formation of abscesses in them is not frequent. The organs with narrower capillaries and less resemblance to the reticulo-endothelial system frequently contain abscesses in addition to the evidence of cellular activity on the part of the reticulo-endothelial system. Localization is infrequent in the third variety but most frequently goes on to abscess formation. Capillaries in the vicinity of a focus were found to be dilated and, in the animal experiment, laden with india ink. This fact points to the etiologic importance of the locus minoris resistentiae in the matter of localization in general sepsis.

Die ärztliche Praxis, Vienna

7: 33-64 (Feb. 15) 1933

Circulatory Therapy in Surgery. N. Jagić.—p. 33.

*Value of Blood Transfusion in Obstetrics and Gynecology. H. Heidler.—p. 36.

*Diagnosis and Differential Diagnosis of Perforated Gastroduodenal Ulcer. F. O. Mayer.—p. 38.

Malignant Diphtheria. H. Mautner.—p. 45.

Evaluation of Bilateral Pneumothorax. A. V. Frisch.—p. 46.

Simulation of Mental Diseases. K. Grosz.—p. 47.

*Therapy of Allergic Disturbances from Point of View of Internist. F. Pineles.—p. 49.

Tumors of Kidney. V. Blum.—p. 52.

Blood Transfusion in Obstetrics and Gynecology.

Heidler's observations on the value of blood transfusion in obstetrics and gynecology were made in forty-two cases. A tabular report, in which he lists the indications for blood transfusion, shows that he employed it in the following conditions: atony of the uterus after delivery, placenta praevia, tearing of the cervix, incomplete abortion, rupture of tubal pregnancy, anemia of pregnancy, toxicoses of pregnancy, puerperal sepsis, metrorrhagia, myoma, before gynecologic interventions, and in

postoperative hemorrhage. Nine of the forty-two patients died. In none of these fatalities was the blood transfusion the cause of death, but it was ineffective in preventing the fatal outcome. The experience gained in these cases and the review of a number of fatal hemorrhages in women in whom blood transfusion was not resorted to convinced the author that blood transfusion has only a limited applicability in obstetrics and gynecology, since the infusion of epinephrine-sodium chloride or of dextrose is generally sufficient. However, occasionally there are cases in which a blood transfusion is the only means of saving the patient's life.

Diagnosis of Perforated Gastroduodenal Ulcer.—Mayer, after describing the symptomatology of perforated gastroduodenal ulcer, discusses in detail its differentiation from the numerous other acute disorders and emphasizes that the life of the patient depends on early diagnosis and early operative treatment. He maintains that the mortality of acute surgical abdominal diseases is the mortality of being too late with the operative intervention. He thinks that it is far better to open the abdomen because of an erroneous diagnosis than to be too late with the intervention.

Therapy of Allergic Disturbances.—Pineles defines allergic diseases as disorders that develop suddenly with a more or less characteristic syndrome, affect primarily the capillaries and the smooth musculature, and can frequently be traced to the influence of allergens. Serum disease, bronchial asthma, hay fever, urticaria, Quincke's edema, membranous colitis, certain cases of migraine, epilepsy and hemorrhagic purpura are mentioned as the most important allergic disorders. With the exception of hay fever and urticaria, which interest primarily the laryngologist and the dermatologist, the author discusses the causes, symptomatology and treatment of all these conditions. He gives the general rules of the procedure to be followed when an allergic condition is probable. He stresses the importance of careful anamnesis, of the test for the hemoclastic crisis and of the cutaneous reactions. In discussing the desensitization in cases of food allergens, he evaluates the oral and the parenteral method.

Jahrbuch für Kinderheilkunde, Berlin

138: 129-248 (Feb.) 1933

Scarlet Fever and Cardiac Defects. W. J. Moltchanow.—p. 129.

Chorea Minor: Clinical Aspects and Etiopathogenesis. O. Krönig.—p. 160.

*Hyperglycemia Following Lumbar Puncture. H. Schönfeld.—p. 174.

Atmospheric and Climatic Influences on Organism of Children: Curative Value. L. Moll.—p. 179.

Investigations on Cholestrum Formation. M. Hohlfeld.—p. 185.

Clinical Aspects of Secondary Pneumonias in Measles. R. Grosser.—p. 200.

*Use of Concentrated Barley Gruel During Nursling Age. M. J. Olewsky, S. A. Gill and S. B. Rodkin.—p. 219.

Treatment of Mastoiditis. V. Hinsberg.—p. 233.

Hyperglycemia Following Lumbar Puncture.—Schönfeld points out that Mader has shown that the introduction of foreign substances into the spinal canal, particularly the introduction of air, is followed by an increase in the blood sugar content, but he has not observed that simple withdrawal of spinal fluid will lead to an increase in the blood sugar content. By following up an accidental observation, the author made the discovery that withdrawal of fluid from the lumbar canal leads to a considerable hyperglycemia in the majority of children and nurslings. In the Leipzig children's clinic he found that the blood sugar values as a rule were unusually high after, but not before, the lumbar puncture. A tabular report indicates that the blood sugar increases rapidly following the puncture and after about thirty minutes again approaches the initial values. The author thinks that Mader failed to make this observation because he did not not withdraw the blood earlier than thirty minutes after the puncture. Whether the quantity of the withdrawn fluid is proportional to the increase in the blood sugar was not determined.

Barley Gruel for Nurslings.—According to Olewsky and his collaborators, rice gruel has been employed successfully in the treatment of acute nutritional disturbances of nurslings. They think that the efficacy of this method is the result of the fact that the concentrated polysaccharides not only fulfil the demand for an easily digestible and assimilable food of sufficient caloric value but also provide an unfavorable medium for bacterial growth. In view of the fact that rice, being an

imported grain, proved rather expensive, the authors investigated whether gruel of barley could not be used for the same purpose. Following a comparison of the chemical composition of the two substances, they report their experiences with barley gruel on 133 children varying in age between 1 month and two years. Some of the children were breast fed, some received breast milk and other foods, others were artificially fed, and the older children received a mixed diet. The disorders for which they required treatment were dyspepsia, intoxication and colitis. The authors emphasize that they do not consider the gruel and carbohydrate treatment a panacea for all nutritional disturbances of infants, but they are convinced that concentrated gruel supplies the required calories. The plan they followed in the feeding with barley gruel was in its main aspects the same as that which had been adopted in the treatment with rice gruel. After discussing their clinical observations they describe experiments on animals and reach the conclusion that concentrated barley gruel is an adequate substitute for rice gruel.

Klinische Wochenschrift, Berlin

12: 209-248 (Feb. 11) 1933

- Rôle of Regulatory Mechanisms in Metabolism. S. Isaac.—p. 209.
Intermediate Processes in Glycolysis in Musculature. G. Embden, H. J. Deuticke and G. Kraft.—p. 213.
*Action of Vitamin Factors on Growth, Duration of Life and Fertility. F. Groebhels.—p. 215.
*True Menstrual Hemorrhage in Castrated Women Following Administration of Follicle and Corpus Luteum Hormones. C. Kaufmann.—p. 217.
Elimination of Xylose as Measure of Renal Function. Ella H. Fishberg and L. Friedfeld.—p. 218.
*Is Determination of Lipase Superior to Diastase Demonstration in Diagnosis of Acute Disorders of Pancreas? F. Bernhard.—p. 221.
*Acid Base Equilibrium and Edema Formation. O. L. E. de Raadt.—p. 224.
Sodium Formate as Substitute for Sodium Chloride. J. Freund.—p. 226.
Extravascular Spontaneous Changes of Human and Animal Erythrocytes. R. Doerr and S. Seidenberg.—p. 227.

Action of Vitamins on Growth, Duration of Life and Fertility.—Groebhels made his experiments on rats. As basic food the animals were given a fodder having the following constituents: defatted casein 420 Gm., mixed salt 245.6 Gm., rice starch 2,352 Gm., palmitin 600 Gm. and filter paper 80 Gm., the vitamin B requirements being supplied by 452 Gm. of yeast. This mixture was baked into biscuits and fed to the animals together with drinking water. As additions the author chose a substance designated as "ossin," containing cod liver oil and egg yolk (vitamins A, B and D), cod liver oil (vitamin A and D) and viosterol (vitamin D). He found that whereas the basic food, containing only vitamin B in the form of yeast, did not reduce the fertility, the addition of ossin, cod liver oil or viosterol reduced the fertility. The author thinks that the latter effect is the result of the action of vitamin D, which increases proportionately to the time during which, before littering, the female rat has received this vitamin. The young that receive only mother's milk and the basic food live longer as the period shortens during which the mother animals received the basic food before littering. Addition of ossin to the basic food of the mother animals and of the young has a more favorable effect on the duration of life than has the addition of cod liver oil or viosterol. If the mother animals are given the basic food with the additions beginning on the day of littering, and the young are given the same additions besides the mother's milk and the basic food, it can be observed that the growth process is least favorable if the addition is viosterol. Addition of ossin has a better effect on the growth than the same amount of cod liver oil. The action of the cod liver oil contained in the ossin is improved by the egg yolk.

Menstruation of Castrated Women Following Hormone Therapy.—Kaufmann states that in two women who, several years previously, had undergone surgical castration and who, as a result of this, had been amenorrheal and had had an atrophied uterine mucosa, the administration of the two genitally active hormones of the ovaries, the follicle hormone and the corpus luteum hormone, produced true menstrual bleeding; that is, with shedding of a real decidua menstrualis. He concludes that these two hormones are the only two necessary to produce the menstrual changes in the endometrium. He considers it of great significance for the evaluation of the

functional capacity of the hormone preparations that it has been possible to produce a true menstrual hemorrhage in women who have no ovaries; but the most important result of his studies was the observation that the quantities of hormones necessary to produce menstrual changes in the uterine mucosa of castrated women are much larger than those heretofore employed in ovarian hormone therapy.

Diagnosis of Pancreatic Disorders.—Bernhard observed an increase in the atoxyl-fast lipase content of the blood serum in sixteen patients with acute pancreatic disturbances. He finds that the lipase demonstration is a valuable diagnostic aid in the recognition of acute necrosis of the pancreas but it gives no information about the severity of the condition. The simultaneous determination of diastase and lipase in various acute pancreatic diseases shows that the increase of diastase in the urine subsides more rapidly than does the increase of lipase in the blood. For this reason the lipase demonstration is superior to Wohlgemuth's method, particularly in the various forms of pancreatic necrosis. In acute pancreatic diseases the increase in the lipase content is evidently just as rapid as the increase in diastase. Occasionally there are cases in which both ferment methods fail. The author describes a case in which only the lipase was considerably increased. In diseases of the biliary tract, particularly following severe gallstone attacks, there is sometimes an increase in the lipase content in addition to the diastase increase. The fact that in these cases the lipase decreases but slowly is a disadvantage in the recognition of acute necrosis of the pancreas.—The atoxyl-fast lipase content of the blood is also generally increased in chronic pancreatitis; in this condition the lipase test and the diastase demonstration deserve the preference. An increase of the atoxyl-fast lipase in the blood is observed occasionally in struma, diabetes mellitus, pernicious anemia, hypertrophy of the prostate, and carcinoma. This, of course, detracts from the value of the method in the diagnosis of pancreatic diseases.

Acid Base Equilibrium and Edema.—De Raadt maintains that, as soon as the renal ammonia production becomes insufficient for the elimination of acids (relative renal insufficiency), the organism compensates its deficiency in bases by extrarenal ammonia formation. This ammonia is not only the poison of uremic and eclamptic intoxication but also the poison of the diabetic coma designated as "acid intoxication" or, expressed differently, there is no acid intoxication but only a compensatory ammonia poisoning. The author shows that edema plays only the rôle of an alkali depot and that the only factor causing edema formation is an uncompensated renal acidosis. Apparently this does not apply to nephrosis, in which acidosis is frequently absent, although there is considerable edema formation. But the author thinks that acidosis is absent in these cases only because it is completely compensated extrarenally (continuous edema resorption). This self alkalization becomes evident in the concurrence of an increased hydrogen ion concentration in the urine and an increased ammonia number. The author shows that the decrease in the colloid osmotic pressure of the blood is of no importance in edema formation and that the so-called osmotic edemas are the result of an uncompensated acidosis. To prove his opinion that the edemas of patients with cardiac decompensation do not differ from the edemas of patients with renal disease, he cites the following factors: 1. In patients with decompensated cardiac disorders there exists a general acidosis as the result of circulatory disturbances in the lungs (impaired carbon dioxide elimination) and in the kidneys (reduced renal ammonia production). 2. Since the end products of metabolism are of acid character, the acidosis must be strongest where the circulatory disturbance is greatest; that is, in the lower portions of the body. 3. The edema of patients with heart disease contains nearly as much ammonia as the nephrotic edema (7 mg. per hundred cubic centimeters compared to from 8 to 10 mg.), and the extrarenal compensation of the acidosis is here likewise accomplished by ammonia formation. As another factor of edema formation the author calls attention to the increased permeability of the capillary wall, which is the result of the ammonia formed in the tissues. In regard to the therapy he states that in patients with renal disease the extrarenal ammonia formation and with it the edema formation can be counteracted by the administration of alkali, but that acid therapy involves danger.

Monatsschrift für Kinderheilkunde, Berlin

55:241-476 (Jan. 13) 1933. Partial Index

- Erythema Nodosum Endemic in Hospital Ward. O. Götche.—p. 241.
Comparative Observations in Repeated Poliomyelitis Epidemics in Same Locality. W. Pockels.—p. 259.
Incidence of Tuberculosis in Various Growth Periods of Childhood: Significance for Welfare Work. I. Peiser.—p. 270.
*Peculiarities of Osteomyelitis in Early Childhood. G. Paschlau.—p. 280.
*Aspects of Phenobarbital Intoxication. Anneliese Weidemann.—p. 307.
Chlorine Intake and Function of Chlorine Depots During Nursing Age. G. Török.—p. 312.
Capillaroscopic Studies. E. von Lederer.—p. 327.
Accompanying Symptoms of Operative Treatment of Pylorospasm in Nurslings. W. Munting.—p. 341.
*Infectious Forms of Encephalitis During Childhood. P. Eiwin and S. Wurman.—p. 365.
*Rare Manifestation of Tuberculous Infection. K. Ochsenius.—p. 433.

Peculiarities of Osteomyelitis in Early Childhood.—Paschlau points out that the osteomyelitis of early childhood, particularly that of the first year of life, differs considerably from that of older children in its anatomic, clinical, prognostic and therapeutic aspects. Osteomyelitis of early childhood is usually localized at the ends of the long bones, to both sides of the epiphyseal line. As a result of this localization, the osteomyelitic suppurations have a tendency to spread underneath the periosteum and into the soft parts, instead of toward the diaphysis and the medullary cavity. The author thinks that this tendency of the suppuration to progress outward explains why the osteomyelitis of early childhood is generally less severe and of shorter duration than are the forms that develop later. He discusses the incidence of osteomyelitic foci in the different bones and the various complications, such as suppuration of the neighboring joints, separation of the epiphysis and metastasization. The clinical course of osteomyelitis varies greatly during early childhood. It occurs in all forms, from the mild focal disorder without high fever and without disturbance of the general condition to the fulminating septic general infection that ends fatally within a few days. The most frequent form is a local disturbance of medium severity. Its onset is acute, with high fever, the affected member showing rapid phlegmonous swelling. Softening sets in within a few days and the abscesses of the soft parts generally develop within the first week, so far that incision may be resorted to. In some cases the temperature decreases after this, unless retention of pus causes a new increase. In other cases the suppuration spreads and involves the joints. The author emphasizes that the clinical character of osteomyelitis during early childhood is determined not by chronic fistulous suppuration and formation of sequestrums but by severe complications, especially articular suppurations. He discusses non-suppurative exudates that concur with osteomyelitis, also osteomyelitic arthritis, septic osteomyelitis, differentiation from similar disturbances, hematogenic osteomyelitis of the cranium, and vertebral, maxillary and costal osteomyelitis. In regard to the treatment it is stated that, in small children with uncomplicated osteomyelitis of the tubular bones, incision of the subperiosteal abscesses and of those of the soft parts is generally sufficient. In osteomyelitic articular empyemas, punctures and small incisions without insertion of drains gives the best results. Careful nursing and nutrition are of vital importance. If anemia develops, injection of human blood or a suitable diet may prove helpful and, if not, treatment with iron, copper, liver and arsenic should be resorted to.

Intoxication with Phenobarbital.—Weidemann relates the clinical history of a girl, aged 3, who, nine months before, had suffered from measles with a severe bluish red exanthem. When the child came under the author's observation, it had had whooping cough for four weeks, and treatment with phenobarbital had been instituted sixteen days previously. For twelve days the child had been given four tablets a day; that is, the daily quantity of phenobarbital was 0.06 Gm. Then the medicament was discontinued, because suddenly the temperature increased to 39 C. (102.2 F.), vomiting set in, the pharynx was reddish and the entire body became covered with a light red exanthem. The physician in charge diagnosed the condition as scarlet fever and injected scarlet fever streptococcus serum. In spite of this the exanthem became more severe within the next two days and the general condition became poorer. On the basis of the anamnesis and of the clinical manifestations during the first few days, measles as well as scarlet fever could be excluded. Phenobarbital intoxi-

cation was suspected because the cutaneous manifestations resembled those that have been observed as the result of another barbituric acid preparation and the described case resembled that form of intoxication also in regard to the incubation period (from eight to twelve days) and the blood picture. Unusual aspects of this disturbance are the mucous membrane manifestations, the extraordinarily large lamellar desquamation and the protracted persistence of the cutaneous manifestations: in the reported case, remainders of the exanthem in the form of pale brownish pigmented spots were still visible after six months. The author considers the condition an anaphylactoid disorder.

Infectious Encephalitis During Childhood.—Eiwin and Wurman give the following summary of their observations on infectious encephalitis: 1. The incidence of infectious encephalitis has increased in recent years. 2. Encephalitis may develop as a complication of various infections. 3. The clinical aspects of infectious encephalitis in children are extraordinarily diverse, and they differ frequently from the course this disease takes in adults. 4. The frequent deviations from the classic form of encephalitis can be explained by the syndrome that is produced by the involvement of the extrapyramidal tracts. 5. The prognosis of infectious encephalitis is extremely uncertain. 6. In the therapy, nursing and particularly the diet are of greatest significance.

Rare Manifestation of Tuberculous Infection.—Ochsenius reports a case in which a reddish infiltration that gave the impression of erysipelas developed on the forehead of a boy, aged 4 years. The mother stated that the child had suffered from a high temperature for three days and that, after the temperature subsided, spots appeared on the forehead and had spread, leaving only stripes later on. At the time medical aid was asked a second attack had just passed, and three more followed. The course was always the same, except that during the last attack the infiltration spread to the body, particularly to the back and arms. The author gives the leukocyte count during this last attack and admits that the interpretation of the condition was at first difficult, until the anamnesis gave a clue. The child's grandfather, who lived with the family, had pulmonary tuberculosis and died of it during the period the boy had the intermittent attacks. The tuberculin reaction was strongly positive in the boy and roentgenoscopy revealed a considerable enlargement of the hilus glands, partly with calcium deposits. The therapy consisted of the administration of roborant medicines and of inunctions with a tuberculin in an ointment base. These inunctions were given from two to four times monthly and were continued for twenty-one months. The treatment was successful in that the attacks of fever ceased and the red spots developed only a few times and were not followed by infiltration. The author considers the condition an allergic manifestation in the course of a tuberculous infection.

Münchener medizinische Wochenschrift, Munich

SO:205-244 (Feb. 10) 1933

- Foundations of Therapy. L. von Krehl.—p. 205.
Roentgenologic Demonstration of Cardiac Aneurysm. F. M. Groedel.—p. 210.
*Reinjection of Own Blood Following Its Irradiation. A. Braun.—p. 211.
House Allergens as Cause of Chronic Dermatoses and Mycoses. E. Urbach.—p. 212.
*Thrombophlebitic Sepsis Following Tonsillitis with Influenza Bacilli in Blood. H. Frank.—p. 214.
Erroneous Diagnoses of Appendicitis. E. Seifert.—p. 215.
Postoperative Stimulation of Peristalsis and Treatment of Atony. P. Caffer.—p. 219.
Treatment of Fracture of Ankle Joint According to Böhler. H. Schneider.—p. 222.
Histamine Iontophoresis. V. Schenck.—p. 223.
Base Holder for Martin's Anthropometer. W. Thomsen.—p. 224.

Reinjection of Own Blood Following Irradiation.—Braun gives a brief report of experiments that were made to determine whether direct irradiation of the blood with the quartz lamp would improve the results of autohemotherapy. On the basis of observations made up to now, he reaches the following conclusions: 1. Irradiation of the blood serum has no influence on the number of erythrocytes; consequently the active substance must be in the erythrocytes. 2. The action becomes manifest only after an irradiation of considerable intensity (five minutes' duration at a distance of 30 cm.), and this indicates that the substance is liberated by the irradiation.

3. The nearly identical results following intramuscular and intravenous reinjections prove that such a substance is liberated.
4. The point of attack for this substance must be in the spleen, because there was no result in the absence of the spleen.

Posttonsillitic Thrombophlebitic Sepsis with Influenza Bacilli in Blood.—Frank reports a typical case of thrombophlebitic sepsis that developed after a tonsillitis with bilateral tonsillar abscesses and with early pulmonary infarcts that simulated the clinical aspects of pneumonia. The interval between the tonsillitis and the beginning of the sepsis is not entirely unusual. However, it is not typical that the pulmonary manifestations predominated, and for this reason it was at first difficult to differentiate the condition from a pulmonary disturbance, although the physician in charge was well acquainted with the aspects of posttonsillitic sepsis. Since influenza bacilli were found in the blood as well as in the pleural empyema, it cannot be doubted that they played an essential part. The fact that only influenza bacilli were found in the blood is considered proof by the author that the influenza bacilli caused not only the complications but the entire disease process, the more so since the literature reports two other cases of thrombophlebitis caused by influenza bacilli, although in regard to the port of entry and the site they differed from the reported case. The postmortem examination corroborated the thrombophlebitis, the septic pulmonary metastases and the peritonsillar abscesses.

Wiener klinische Wochenschrift, Vienna

46: 193-224 (Feb. 17) 1933

- Infection and Disease, Allergy and Immunity. F. Hamburger.—p. 193.
*Obliation Therapy of Varicose Veins. G. Nobl and M. Wolf.—p. 198.
Circulatory Disturbances and Working Capacity. R. Hift.—p. 200.
Casuistics on Chronic and Essential Thrombopenia. E. Hausner.—p. 204.
*Clinical Value of Complement Fixation Reaction in Gonorrhea in Men. R. Chwalla.—p. 206.
*Diagnosis and Therapy of Gallstone Disease. C. Ewald.—p. 210.
Technic of Proctosigmoidoscopy. W. Zweig.—p. 211.

Obliteration Therapy of Varicose Veins.—On the basis of their own observations and of statistical reports covering many thousands of cases, Nobl and Wolf feel justified in asserting that in the hands of the experienced physician the obliteration therapy of varicose veins involves no dangers and therefore can replace the surgical interventions. They found that the injection of solutions of dextrose brings better results than the injection of solutions of sodium chloride. They admit that a few fatalities have occurred, but they think that careful selection and exact technic will avoid fatalities in the future.

Complement Fixation Reaction in Gonorrhea.—Chwalla shows that the results of the complement fixation reaction vary considerably according to the type of antigen used. This was proved by the experiences of Engelhardt and Summent, who sent twenty-four serums to six different investigators and received identical results in few of the cases. The author had similar experiences in 110 cases of gonorrhea. The complement fixation tests were done in two different laboratories, and in only sixty-eight cases was there complete or almost complete identity of the results, which shows that there is a wide margin of error. In view of the comparatively small material studied by the author, he does not feel justified in making a definite statement about the prognostic value of the complement fixation reaction, but he is inclined to doubt it. A constantly negative reaction means only that complement fixing substances are absent. Many consider a negative reaction an unfavorable sign, but the author does not think so, even in cases of chronic complications. He shows that the complement fixation reaction is not reliable in the diagnosis of a latent gonorrheal infection or in the differentiation between new infection and relapse. He thinks that, aside from being an aid in the differential diagnosis of certain cases, the complement fixation reaction has little practical significance. However, he thinks that institutions which have the necessary facilities should employ it regularly, because it is interesting and in some instances it complements and supports the other clinical methods.

Diagnosis and Treatment of Gallstone Disease.—Ewald shows that the diagnosis of cholelithiasis, as compared to that of urolithiasis, is still backward and difficult, because the diagnostic methods introduced recently are so complicated that they cannot be employed in cases in which they are most needed. In discussing the treatment of cholelithiasis the author empha-

sizes the value of an early operation. He states that he has obtained favorable results by operating during the attack. He asserts that at this time the intervention is much simpler than if the intervention is made after the inflammatory infiltrations have become contracted scars. To the objection that relapses are likely, he replies that relapses occur in urolithiasis even more frequently than in cholelithiasis but that this objection is not raised against interventions on the bladder, ureters or kidneys. In urology the danger of pyelonephritis is considered greater than the relapse of the lithiasis, and he thinks that this is equally true for cholelithiasis. That cholangiohepatitis is not so readily recognized and takes a more insidious course is certainly no reason for disregarding it. Moreover, the diagnosis of relapse of lithiasis is frequently made erroneously, because it is extremely difficult to detect calculi in the gall-bladder. The author found microscopic examination of the native bile withdrawn by puncture helpful in the detection of biliary concretions.

Hospitalstidende, Copenhagen

75: 1411-1438 (Dec. 15) 1932

- *Investigation on Course of Phosphate Elimination in Salyrgan Diuresis and Purine Diuresis. A. Yde.—p. 1411.
Nosocomial Suicides in Denmark's Hospitals for Insane from 1922 to 1931. C. Clemmesen.—p. 1421.
Measurements of Temperature with Thermal Element in Short Wave Field: Preliminary Report. O. Brinch.—p. 1432.
Case of Poisoning with Oil of Eucalyptus. P. Vogt-Møller.—p. 1434.

75: 1439-1466 (Dec. 22) 1932

- Light and Medical Science. C. E. Bloch.—p. 1439.
*Investigation on Course of Phosphate Elimination in Salyrgan Diuresis and Purine Diuresis. Ctn. A. Yde.—p. 1448.
Investigations on Kahn's "Presumptive Test." H. Boas and Elvira Øigaard.—p. 1460.

Phosphate Elimination in Salyrgan Diuresis and Purine Diuresis.—Yde's results showed a reduced phosphate elimination appearing from one to two hours after injection of salyrgan and lasting from two to three hours. The twenty-four hour elimination of phosphate and the plasma phosphate were not affected. The administration of theophylline did not influence the phosphate elimination but caused a reduction in the plasma phosphate.

75: 1467-1478 (Dec. 29) 1932

- *Two Cases of Tumors in Ischium, with Recovery After Interilio-Abdominalis Amputation and Extirpation. F. Djørup.—p. 1467.
Investigation on Muller's Conglobation Reaction No. II. H. Boas and Elvira Øigaard.—p. 1476.

Tumors in Ischium.—Djørup's first patient, a man aged 37, with osteosarcoma of the inferior ramus of the ischium for which an interilio-abdominalis amputation was performed, was well when examined after three years. The second patient, a girl aged 13, showed neither subjective nor objective symptoms fifteen months after the extirpation of an enchondroma, the size of a fist, in the inferior ramus.

Ugeskrift for Læger, Copenhagen

95: 159-188 (Feb. 9) 1933

- *Simple Achylous Anemia After Gastro-Enterostomy and Partial Stomach Resection. E. Meulengracht.—p. 159.
Temperature in Stomach, Esophagus and Pharynx: I. Under Normal Conditions. J. Foged.—p. 163.
*Open Pulmonary Tuberculosis in Children with Especial Reference to Average Length of Life. V. Poulsen and A. O. Andersen.—p. 169.
"Thyroid Test" by Injection of Urine in Rabbits. H. Nielsen.—p. 172.

Simple Achylous Anemia.—Meulengracht says that the grave anemias which in certain cases appear after this disturbance correspond in hematologic picture and otherwise to the usual simple achylanemia. Functional tests in such cases give results like those in achylia. It is difficult to determine whether the achylia is true, i. e., due to cessation of secretion, or apparent, i. e., due to inflow of alkaline fluid from the intestine and hastened emptying. Functionally, however, achylia is present and is assumed to be the cause of the anemia.

Open Pulmonary Tuberculosis in Children.—Poulsen and Andersen supplement Hasle's report on older children (*Ugesk. f. læger* 94: 1231 [Dec. 22] 1932) with their experiences in a material of 622 Pirquet positive children mostly under the age of 4 years, in 199 of whom tubercle bacilli were established. They find the prognosis grave for infants with tubercle bacilli in the stomach lavage water, but about one half apparently recover; in the second year of life the prognosis is far better; in the third and fourth years, good.

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RECLASSIFICATION OF THE ANEMIAS

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In the last ten years a revolution has occurred in the views of anemia. To indicate what the advance has been I propose (1) to review briefly the work of a series of experimenters and clinicians, (2) to present a new classification of the anemias based on their work, and (3) to discuss the methods of therapy.

REVIEW OF RECENT RESEARCH

The ball was set rolling, so to speak, by an extraordinary series of researches planned on a large scale, begun before 1920 and continued with great industry to the present day by Whipple and Robscheit-Robbins¹ at the University of Rochester, N. Y. These workers studied the treatment of long sustained secondary anemia in the dog by various diets and other forms of therapy. They cleared up many inconsistencies in the work of their predecessors by the manner in which they brought about the anemias in the dog. It would take me too far afield to describe their technic in detail, but the essential point is this: After a single hemorrhage or a few repeated hemorrhages or after an acute destruction of blood, the body still retains a large store of potential blood-forming material. It requires three or four months of persistent bleeding and a diet containing a minimal and known amount of such blood-making material (namely, a diet of a special bread) to use up this potential store. By careful hemoglobin determination, blood volume estimations, and the like, it is possible to estimate with great exactness how much hemoglobin the dog is capable of manufacturing per week.

Dogs that have thus been gradually brought to the base line and kept on the special bread diet (which is adequate in every other way to maintain their health) produce about 3 Gm. of hemoglobin in a standard two week period. When other foods or medications are added to the standard bread diet, their effect on blood formation can readily be learned. Table 1 presents a selection of the most significant of a large number of substances investigated by Whipple and Robscheit-Robbins; it shows how much hemoglobin the addition of each of these substances to the diet enables the dog to make in the two week period.

For dogs, at least, the green vegetables fall far short of their reputation. Spinach produces only 15 Gm. of hemoglobin in two weeks. This may well be, of course, because the dog is a carnivorous animal. It is quite certain that the Herbivora oxen, for example, can utilize

chlorophyll in blood formation; it is probable from clinical observation that man also can to a certain extent. However, it is not merely the vegetable origin of the material that is important. Many of the fruits in the table, such as peaches and apricots, lead to as much blood formation in the dog as do the best varieties of animal foods, with the exception of kidneys and liver. It is interesting to note that beef, in spite of its reputation as a blood maker, stands only a little above the green vegetables. The most important fact discovered by Whipple and Robscheit-Robbins was the enormously stimulating effect of a diet containing large amounts of mammalian kidney and, above all, of a diet containing adequate amounts of mammalian liver. Surprisingly enough, fish liver has no more potency than fish itself. Beef liver leads to an average production of 95 Gm. of hemoglobin in two weeks. These authors confirm the well known stimulating effect of inorganic iron in secondary anemias; in suitable doses it leads to the production of 55 Gm. of hemoglobin in a two week period. The iron normally present in the liver is evidently not the only factor in the effectiveness of liver as a blood producer, since optimal doses of iron produce less hemoglobin than does liver itself. An enormous amount of hemoglobin is produced by the combination of liver with inorganic iron; namely, 140 Gm. in the two week period. As Whipple and Robscheit-Robbins point out, no inorganic factor (even the combination of iron and copper to be referred to later) can compare to a suitable diet in this form of anemia.

The second great series of researches are those of Minot and Murphy² and a large group of active workers that has grown up around them at Harvard University. Their first important announcement was made in 1926. Stimulated by Whipple's work, Minot and Murphy tried in a systematic way a great variety of different diets in all sorts of clinical anemias. At first they came to the conclusion that a diet rich in animal protein was favorable for anemia. One cannot but admire the courage and thoroughness with which they insisted on carrying this out, thereby making their important discovery. Other clinicians, aware of Whipple and Robbins' work, had tried adding some liver and kidney to the diet of anemia cases and had casually observed good results. Minot and Murphy were, however, not satisfied with trying small amounts taken irregularly, but made their patients consume from one-half to 1 pound of liver a day.

Time will not permit me to go into the details of the effects of liver in pernicious anemia cases; so much has been written and said on the subject in the last few years that the facts are common knowledge. I may say

From the Medical Service, Mount Sinai Hospital.
Read before the Bronx County Medical Society, Feb. 14, 1933.
1. Robscheit-Robbins, F. S.: *Physiol. Rev.* 9: 683 (Oct.) 1929.

2. Minot, G. R., and Murphy, W. P.: *Treatment of Pernicious Anemia by a Special Diet*, *J. A. M. A.* 87: 470 (Aug. 14) 1926; *A Diet Rich in Liver in the Treatment of Pernicious Anemia*, *ibid.* 88: 759 (Sept. 3) 1927.

briefly that with an adequate amount of liver or liver extract (in a subsequent section I will discuss what is meant by "adequate") the first effect is the increase in appetite and sense of well being and an increase in the number of reticulated red blood cells in the circulation from less than 1 per cent to 5, 10 or even 20 per cent in from five to seven days. This outpouring of young reticulated red blood cells from the bone marrow is temporary and is succeeded in the following weeks by a progressive increase in the hemoglobin and the number of red blood cells. The rise in the red blood cells in patients who are quite anemic (namely, have $2\frac{1}{2}$ million or less to start with) is more rapid than that of the hemoglobin, so that the color index soon becomes normal. It is not unusual to observe an increase of from 1 to 3 million red blood cells in the first three weeks, and at the end of four months they are usually normal in number. The white blood cells begin to increase at the same time as the reticulocytes; the blood platelets, which are also depressed in pernicious anemia, begin to increase somewhat later. Within a few weeks there is a sharp increase in the percentage of eosinophilic leukocytes, sometimes to more than 20 per cent, if whole liver is taken. This persists for many weeks and then gradually returns to normal. The evidences of excessive blood

TABLE 1.—Average Hemoglobin Production of Anemic Dogs in a Two Week Period as Influenced by Diet *

Diet	Hemoglobin, Gm.
Bread alone	3
Bread and milk	3
Bread and spinach	15
Bread and apricots	48
Bread and eggs	45
Bread and whole fish	13
Bread and beef	17
Bread and kidney	70
Bread and beef liver	95
Bread and liver extract No. 343	10-20
Bread and iron	60
Bread and beef liver and iron	140

* Whipple and Robschleit-Robbins.

destruction, such as the yellow color of the patient and the elevated icterus index in the blood serum, disappear in a few weeks. The atrophy of the tongue and the other tongue symptoms usually disappear by the time the blood has become normal. Neurologic symptoms, however, improve to only a limited extent, if at all. But in cases in which the blood can be brought to normal and kept normal, there is generally no further progression of the neurologic symptoms already present.

How does the liver diet work? Before 1926, approach to the problem of pernicious anemia was based on the conception of a hemolytic toxin. It is hard to believe that the liver diet merely stops a hemolytic process, although undoubtedly it does that also. Peabody, in 1927, began making biopsies on the bone marrow of patients undergoing liver treatment. He observed that the liver stimulates the maturation of the immature cells that crowd the marrow, and he noted the decrease of the megaloblasts in the marrow as the patient improved. This probably answers the old search for a hemolytic toxin in cases of pernicious anemia, referred to again and again in the older literature. Probably there is no toxin, but the cells disintegrate more rapidly than normal cells because they are turned out in an immature condition. What the specific substance in the liver does is to supply the patient with a sufficient amount of something that his body has lacked for a long time that is necessary for the complete maturation of red blood cells.

Incidentally, the simple clinical procedure of making bone marrow biopsies, introduced by Zadek, is becoming one of increasing value in understanding and diagnosing various blood conditions.

The next important step was the investigation into the nature of the substance present in liver which produces these extraordinary effects in pernicious anemia. This work, done particularly by Edwin Cohn and a group of other investigators associated with Minot,³ has proceeded step by step in a systematic and difficult course and has resulted in the concentrated liver extracts that are now available to every practitioner for use by mouth or by injection. It has become apparent that in pernicious anemia what effects the cure is only a minute part of the 250 to 500 Gm. of crude liver which the patient needs each day. As little as 0.6 Gm. (10 grains) a day of Cohn's purest fraction is enough to produce a pronounced response in pernicious anemia cases. The active principle is easily soluble in water but is precipitated by alcohol or ether. It is free of iron as well as of protein, carbohydrate and lipid and is apparently a nitrogenous base or polypeptide. Its precise chemical composition is not yet unearthed, as the pure substance has not yet been isolated.

The next great advance in knowledge of the nature of pernicious anemia came from Castle and a group of his associates in Boston who worked independently of Minot. In order to appreciate this work it is necessary to go back some years and refer to the gradual recognition of the central rôle which the absence of hydrochloric acid from the stomach plays in pernicious anemia. The occurrence of this phenomenon was discovered independently by von Noorden in 1891 and by Einhorn in 1892, but it was Kurt Faber,⁴ in 1900, who first studied a large series of cases and showed that the achlorhydria is an essential part of the disease. In subsequent studies, Meulengracht in Scandinavia and Hurst in England (1923) showed not only that the absence of acid is characteristic of the disease but also that it regularly precedes all other symptoms of the disease and does so by years. Not one case of pernicious anemia has been reported which, examined prior to the disease, had a normal functioning gastric mucosa. Furthermore, it was shown that the achylia, once established, is permanent and that it occurs with undue frequency in the families of patients with pernicious anemia. It is now believed that the tendency to develop achlorhydria in middle age is the constitutional basis that predisposes to the development of pernicious anemia.⁵

Knowing this, Castle⁶ set to work to investigate the relation of the stomach to the production of the anti-anemic principle that is curative in pernicious anemia. He quickly found that the administration of hydrochloric acid, of pepsin or of normal gastric juice to pernicious anemia patients was without effect. But if chopped meat was first thoroughly digested with gastric juice and then administered to pernicious anemia patients by stomach tube the result was phenomenal. It was equivalent to the administration of liver extract itself. The gastric juice of pernicious anemia patients incubated with meat is entirely without effect even if pepsin and hydrochloric acid are added, so that normal digestion proceeds.

3. Cohn, E. J.; Minot, G. R.; Alles, G. A., and Salter, W. T.; *J. Biol. Chem.* 77: 325 (May) 1928.
4. Faber and Bloch; *Ztschr. f. klin. Med.* 40: 98, 1900.
5. Cornell, B. S.; *Medicine* 6: 398 (Sept.) 1927.
6. Castle and Locke; *J. Clin. Investigation* 6: 2, 1928. Castle, W. B.; Townsend, W. C., and Heath, C. W.; *ibid.* 9: 2 (Aug.) 1930. Castle, W. B.; *Am. J. M. Sc.* 178: 748-764 (Dec.) 1929. Castle, W. B.; Heath, C. W., and Strauss, M. B.; *ibid.* 182: 741 (Dec.) 1931. Strauss, M. B., and Castle, W. B.; *New England J. Med.* 207: 55 (July 14) 1932.

It is evident that there is some essential substance present in normal gastric contents, called by Castle the "intrinsic factor," and another essential substance present in beef muscle and certain other foods, called by him the "extrinsic factor." The interaction of these two substances under conditions that are favorable to the digestion of proteins produces in the stomach the antianemic principle which is curative in pernicious anemia. Apparently the antianemic principle so formed is absorbed and stored in the liver, which thus becomes the chief source for obtaining it.

The intrinsic factor in normal gastric juice is neither hydrochloric acid nor any of the usual enzymes; nor is it the antianemic substance itself, as is seen from the following observations:

1. The gastric juice alone does not produce the curative effect.

2. The intrinsic substance in gastric juice is thermostable, being destroyed at 70 C. in half an hour, or by 40 C. in three days, while the antianemic substance is thermostable, resisting cooking and boiling for a reasonable length of time.

3. The intrinsic factor acts on beef muscle even at a neutral reaction, while pepsin reacts only in an acid reaction.

4. Gastric juice freed from pepsin and rennin by absorption methods still is effective on beef muscle.

The extrinsic factor is present not only in beef muscle but in a number of other substances, including yeast. It is absent, however, from many proteins such as casein, wheat gluten and nucleoprotein and is also absent from nucleic acids derived from animal sources and from yeast. There are some reasons for believing that it is related to vitamin B₁₂ or G (active in pellagra).

Pursuing this line of thought, Sturgis and Isaacs⁷ at Ann Arbor, Mich., have introduced a practical and useful addition to the therapeutic armamentarium; namely, desiccated hog stomach. They found that the whole stomach of the hog, freed of extraneous substances including fat, chopped up fine and dried without the aid of too much heat, was equivalent in value to liver extract and had practical advantages over liver extract in certain cases. A knowledge of Castle's observations explains why it was that Sturgis and Isaacs found that neither the mucous membrane of the hog's stomach nor the muscular layer alone was effective, but that it was necessary to administer the two together in order to obtain the antianemic effect. The mucosa provides the intrinsic substance; the muscular layer, the extrinsic substance.

Clinical experience has shown that liver extract is potent not only in pernicious anemia but also in sprue and certain other related anemias; but in spite of its enormous potency in these anemias it is entirely inert in anemias secondary to hemorrhage and to a large group of other causes. This apparent contradiction of the fundamental animal observations of Whipple and Robschey-Robbins on the effect of liver diet in secondary anemia led them to compare the effect on secondary anemia not only of liver extract (No. 343), as used in pernicious anemia, but of numerous other liver fractions prepared in different ways. They found that the effect of the liver extract was trifling, only 20 Gm. of hemoglobin being produced in two weeks as compared with 95 Gm. produced by the feeding of whole

liver, and 140 Gm. produced by the feeding of liver and inorganic iron. In fact, it turned out that there were many other fractions in liver, including especially certain mineral substances present in the ash, which have a more marked stimulating effect in the production of red blood cells in this variety of anemia. The effect of the antianemic substance of Minot and Cohn can be demonstrated only in human cases that have an actual deficiency of it, as pernicious anemia.

The meaning of Whipple and Robbins' observations will be clearer after a discussion of the important results that have come in recent years from the studies of the nutritional anemias of the rat. If young rats are fed an exclusive milk diet, they develop an extreme grade of anemia comparable in many ways to the nutritional anemias of infants. Recently it has been shown that exactly the same occurs with suckling pigs and other mammals. A large number of workers in different localities have studied the effect of various therapeutic procedures on this nutritional anemia of rats.

The most important result has been that of Steenbock, Hart and their group of workers.⁸ They found that this anemia is not cured by chemically pure iron alone but that the addition to iron of the ash of various plants causes a complete cure. Fractionation, that is to say, the addition to iron of each chemical ingredient of the ash, showed that apparently copper is the missing link without which iron is relatively ineffective. An exceedingly small trace of copper is all that is needed; this is why the importance of copper had been overlooked before. If the iron is not especially purified, for example, or if the milk that is fed the animals is collected in copper lined pails, the animals receive enough copper to supplement the iron.

For this reason, there is some doubt still about the need for therapeutic administration of copper with iron. Certainly it is important to remember that an extremely small amount of copper is all that is needed and that too large a dose of it may have toxic effects. The work of some authors suggests that copper is not alone in its ability to supplement iron but that manganese, cobalt and other elements may have at least some of the same effect. This is denied by Hart and his school, who believe that the other investigators do not sufficiently purify their food of copper. The question of the value of other elements is at present a matter of controversy. However, it is conceded by all that a small amount of copper, itself inert, when added to chemically very pure iron, which alone is relatively inert, confers on the iron enormous potency in the nutritional anemia of young mammals.

Clinicians for years have been familiar with the fact that iron was effective in anemia due to blood loss, whereas in anemia due to destruction of blood in the body (hemolysis) iron had relatively little effect. It was shown by Muir⁹ and many others that when hemolysis occurs in the body practically all the iron from the disintegrated red blood cells is conserved in the body, chiefly in the liver. It is apparent then that one of the chief ways in which iron administration does its work in anemia due to blood loss is by supplying that absolutely essential building stone, the iron atom at the center of the hemoglobin molecule. While in order to get a therapeutic result it is necessary to give very large doses of iron, only a small amount of the iron admin-

8. Hart, E. B.; Steenbock, Harry; Waddell, J., and Elvehjem, C. A.: *J. Biol. Chem.* 77:797 (May) 1928. Waddell, J.; Steenbock, Harry, and Hart, E. B.: *ibid.* 83:243 (July) 1929; 84:115 (Oct.) 1929. Elvehjem, C. A., and Hart, E. B.: *ibid.* 95:363 (Feb.) 1932.
9. Muir and Dunn: *J. Path. & Bact.* 19:417, 1914-1915.

7. Sturgis, C. C., and Isaacs, Raphael: *Desiccated Stomach in the Treatment of Pernicious Anemia*, *J. A. M. A.* 93:747 (Sept. 7) 1929. Sharp, E. A.: *An Antianemic Factor in Desiccated Stomach*, *ibid.* 93:749 (Sept. 7) 1929.

istered by mouth is absorbed. But that part absorbed is almost quantitatively converted into hemoglobin.¹⁰ In suitable cases, iron appears to stimulate the bone marrow in very much the same way as liver extract does in pernicious anemia. There is first an outpouring of young red cells (reticulocytes),¹¹ and this is followed by a gradual increase in hemoglobin and red blood cells. However, in the case of iron the hemoglobin is produced more quickly than the red blood cells, tending to bring the low color index up to normal, whereas with liver extract the production of red blood cells is more rapid than that of hemoglobin, tending to bring the high color index down to normal.

It is evident then that both iron and liver extract act by supplying a deficiency. In line with this conception of the action of iron is the fact, observed by Robscheit-Robbins and Whipple, that there is an optimal dose of iron, and that when this dose has been reached and the maximal amount of hemoglobin that can be produced by iron (for dogs, from 50 to 60 mg. of hemoglobin in a two week period) has been attained, a further increase of the dose of iron does not lead to more rapid increase in hemoglobin. However, the addition of liver or kidney to this optimal dose of iron leads to a much greater increase in hemoglobin; namely, 140 Gm. in two weeks. It is evident then that in secondary anemia there are at least two substances which need to be supplied (and undoubtedly there are many more than two) the one iron, the other, whatever it is, that the whole liver supplies.

A NEW CLASSIFICATION

In view of these important investigations and of a large number of parallel clinical studies, only a few of which can be briefly referred to here, it is evident that a new classification of clinical anemias based on present improved knowledge of blood regeneration is needed. The older classifications, such as those of Ehrlich, Hirschfeld, Pappenheimer and Naegeli, were based chiefly on morphology and to some extent on etiology; they separated the group of "primary" anemias because their causes were unknown. The present attempt at classification is based essentially on pathogenesis, so far as discovered, and is correlated with the effects of therapy.

The classification that I present in table 2 is divided into three broad divisions: (1) deficiencies, (2) direct injury to the blood-making organs, (3) blood destruction from whatever cause. There is no fundamental division into primary and secondary anemias, because there are no primary anemias. Every anemia has a cause, although in some cases the cause is still unknown, and the anemia can be classified only on its apparent pathogenesis.

This classification, made necessary by advancing knowledge, is, of course, in itself only a temporary one. It will no doubt have to be revised as soon as new information is at hand. Also, since anemia is a symptom, never a disease, this is not so much a classification of diseases as of anemias due to different mechanisms occurring in different diseases.

In many instances a given condition may have to be classified under two headings. For example, some cases of Bothriocephalus anemia have a group relationship to pernicious anemia and respond to liver therapy; others present only the picture of a hypochromic anemia, and recovery occurs after the removal of the worms. The same thing is true of pregnancy anemia: some patients

do well on liver therapy while others require only iron. In many of the hemolytic anemias there is a possibility that some element of injury to bone marrow may play

TABLE 2.—New Classification of Anemias

I. DEFICIENCIES

A. IRON DEFICIENCIES

1. Blood loss
 - (a) Acute
 - (b) Chronic
 - (c) Hookworm anemia
2. Hypochromic anemia
 - (a) Chlorosis
 - (b) Simple hypochromic anemia
 - (c) Achlorhydric anemia
 - (d) Hypochromic anemia of pregnancy
3. Simple nutritional anemia of infants (on exclusive milk diet)
 - (a) Anemia of premature infants

B. DEFICIENCY OF "ANTI-ANEMIC PRINCIPLE"

1. Pernicious anemia
2. Sprue
3. "Pregnancy pernicious anemia"
4. Bothriocephalus anemia (certain cases)

C. NUTRITIONAL DEFICIENCIES

1. Avitaminoses—*anemia of beriberi, pellagra, scurvy, rickets*
2. Loss of bile or of pancreatic secretion
 - (a) Bile fistula anemia
 - (b) Pancreatic or duodenal fistula
3. Failure of intestinal absorption
 - (a) Chronic diarrheas, sprue (some cases), celiac disease
 - (b) Small intestinal stenosis
4. Nutritional anemia of adults
5. Certain infantile anemias (von Jaksch, Cooley)

II. INJURY TO THE BLOOD-MAKING ORGANS

(Interference with blood regeneration)

A. TOXIC DESTRUCTION OF MARROW

1. Aplastic anemia secondary to:
 - (a) X-rays, radium, thorium
 - (b) Benzene, arsenphenamine, nitrobenzene, trinitrotoluene
 - (c) Lead, mercury, etc.
2. "Primary" aplastic anemia (toxic agent not yet known)

B. MECHANICAL REPLACEMENT OF MARROW

1. Osteosclerosis
 - (a) Osteosclerotic anemia
 - (b) Marble bone disease (Albers-Schönberg)
2. Gaucher's and other lipid deposits in marrow (Niemann-Pick, Schüller-Christian)
3. Leukemia and Hodgkin's disease } (Toxic factor also)
4. Metastatic new growths in marrow }

C. INTERFERENCE WITH BLOOD REGENERATION AT SOME INTERMEDIATE STAGE

1. Diseases of the spleen
 - (a) Banti syndrome ("splenic anemia")
 - (b) Sclerosis or thrombosis of splenic vein
2. Diseases of the liver
 - (a) Cirrhosis
 - (b) Prolonged obstructive jaundice

III. DISINTEGRATION OF BLOOD (hemolysis)

A. CAUSED BY HEREDITARY DEFECTS OF RED BLOOD CELLS THEMSELVES

1. Hemolytic icterus
2. Sick cell anemia

B. TOXIC DESTRUCTION OF BLOOD

1. Infections
 - (a) Bacteria—all varieties, especially those invading the blood: hemolytic streptococcus, Staphylococcus aureus, Streptococcus viridans (bacterial endocarditis)
 - (b) Protozoa—malaria, kala-azar, syphilis
 - (c) Acute febrile hemolytic anemia (cause unknown)
2. Intestinal Worms—Bothriocephalus
3. Cancer (including leukemia and allied diseases)
4. Nephritis—azotemia
5. Extensive burns
6. Hemolytic poisons
 - (a) Serum hemolysins: { paroxysmal hemoglobinuria
incompatible transfusion
pyrodine, tolylenediamine,
pyrogallol, snake venom, mushroom
poison, phenylhydrazine, potassium
chlorate
 - (b) Chemical:

a rôle. Conversely, it is probable that in some of the group in which the injury to the hematopoietic organs is the predominating mechanism some degree of hemolysis may occur.

In some cases, as for example certain infantile anemias classified under nutritional deficiencies, the assignment of the condition is a mere guess, since the true

10. Heath, C. W.; Strauss, M. B., and Castle, W. B.: J. Clin. Investigation 11: 1293 (Nov.) 1932.
11. Weiss, M. A.: Folia haemat. 33: 57 (Sept.) 1926.

mechanism of the anemia is not yet certain; in these instances, the present scheme may at least serve as a convenient framework and perhaps lead to clearer thinking.

The classification is for the most part self explanatory, and it is unnecessary in the present article to discuss all its headings. A few points of special interest will be taken up in order.

That continued anemia due to simple blood loss is essentially an iron deficiency is now well recognized. Loss of blood in a single instance, if not too large, is rapidly regenerated without any specific iron medication, for the reason that the body contains within itself a considerable reserve store of iron. In prolonged or repeated blood loss, iron medication is usually needed because the reserve stores are used up. The contrast between chronic blood loss producing iron deficiency and a hemolytic type of anemia (in which the blood is destroyed in the body and the iron derived from the hemoglobin is almost entirely conserved in the spleen and liver) is brought out beautifully by the studies of Rhodes¹² on hookworm and other anemias in Puerto Rico. He found that iron alone, even with a poor diet and without the parasites being removed, will cure the anemia and keep the patient well; but if the parasites are removed and the iron is not given, it takes a year or more for blood regeneration to occur. On the other hand, in cases of malaria with an equal degree of anemia, it is not necessary to give iron; quinine alone is needed in order to kill the parasites, after which recovery from the anemia occurs spontaneously.

The second heading under iron deficiency, namely, hypochromic anemias, includes a group of important and common diseases whose mechanism is only just beginning to be understood. There is considerable doubt at present whether they represent separate diseases or a single syndrome. The one thing in common in this group of anemias, however, is that they are all promptly cured by adequate doses of iron. About chlorosis, which used to be regarded as a very common disease and which now is rarely seen in its so-called pure form, there has been a great deal of controversy. Naegeli and a group of older clinicians insist that there is such a disease as chlorosis and that it is an entirely separate entity and is easily diagnosed by a combination of rather rigid characteristics: (1) exclusive occurrence in females, (2) commencement at puberty, (3) absence of external causes of anemia, (4) absence of toxic symptoms, (5) characteristic blood picture, and (6) characteristic response to iron.

On the other hand, recent writers, such as Bloomfield¹³ of Stanford University School of Medicine, deny that chlorosis is an entity at all. They point out that it grades off indistinguishably into the general group of chronic hypochromic anemias: that so-called chlorosis is not limited to the female sex, since cases identical in every regard, excepting sex, occur in males. (Witts, for example, who nevertheless regards chlorosis as a separate entity, describes sixteen cases, eight of them in males.) The occurrence of normal gastric acidity likewise is no definite distinction. While it is true that most of the younger individuals with chronic hypochromic anemia have normal gastric acidity and about 90 per cent of the middle aged and older patients have achlorhydria, there still remain about 10 per cent of the latter patients who have a normal gastric acidity.

The one characteristic common to the group of hypochromic anemias in middle aged and older persons (simple hypochromic anemia without achlorhydria and achlorhydric anemia) is the regular therapeutic response through no other treatment than iron. Belonging to the female sex or having deficient acid in the stomach are very strong predisposing factors, but the disease, nevertheless, can occur without one or both of these factors. It may be that the reason for the predominance of the female sex is merely the repeated though slight blood loss at menstruation; as tending to confirm this, in many of the cases in males there is a history of occasional blood loss from bleeding hemorrhoids, peptic ulcer or some other cause. The relationship of anacidity to this group of anemias is understood from the observation of Mettier and Minot¹⁴ that the best absorption of iron from the upper portion of the intestine occurs when the contents of the duodenum are somewhat acid. Nevertheless, it is important to note, as was proved by Witts,¹⁵ that the administration of hydrochloric acid aids blood regeneration only on iron therapy and then only if the dose of iron given is inadequate. The administration of hydrochloric acid is not necessary if the dose of iron is sufficient. It seems convenient, at least tentatively, to separate those cases of hypochromic anemia which have normal or only slightly diminished gastric acidity from those cases which have total achlorhydria and to keep the term "chlorosis" for the occasional cases which fulfil all the requirements of the classic description. The term "chloranemia," however, should be dropped as merely confusing.

Pregnancy anemia is one of the subjects about which there has been a great deal of confusion. Possibly this confusion is due to the fact that, even when the cases included in this term are strictly limited to those not due to complications but resulting from the gravid state itself, the anemia in different cases may be due to different causes. Larrabee,¹⁶ in 1925, pointed out that there are two types of cases. The first, the so-called secondary type or hypochromic anemia of pregnancy, while it may be very severe, frequently responds rather well to iron treatment. Further experience, particularly that of Strauss,¹⁷ has shown that some of these cases present a complete achylia and in all likelihood belong in the group of simple achlorhydric anemias just discussed. The other type of pregnancy anemia, the so-called pernicious anemia type, will be discussed under a later heading.

Anemias of infancy and the peculiar anemia of premature infants form another group about the pathogenesis of which there has been a great deal of confusion. Undoubtedly they do not represent a pathogenic entity. However, especially from the recent work of Helen Mackay¹⁸ in London, it is clear that there is a very common form of simple anemia in infants analogous to the experimental anemia produced in animals by Bunge many years ago; this form of anemia responds specifically to iron therapy and is therefore most properly classed as an iron deficiency. From the work of Mackay it is also probable that the anemia which regularly appears in premature infants is due to the same cause but occurs with greater regularity and severity because the iron reserves at birth are smaller.

14. Mettier, S. R., and Minot, G. R.: *Am. J. M. Sc.* 181: 25 (Jan.) 1931.

15. Witts, L. J.: *Proc. Roy. Soc. Med.* 24: 543 (March) 1931.

16. Larrabee, R. C.: *Severe Anemias of Pregnancy and Puerperium*, *Am. J. M. Sc.* 170: 371 (Sept.) 1925.

17. Strauss, M. B., and Castle, W. B.: *Lancet* 1: 1198 (June 4) 1932.

18. Mackay, Helen M. M.: *Anemia in Infancy*, *Arch. dis. Childhood* 3: 132 (June) 1928.

12. Rhodes: *Proc. Soc. Clin. Investigation*, May, 1932.

13. Bloomfield, A. L.: *Relations Between Primary Hypochromic Anemia and Chlorosis*, *Arch. Int. Med.* 50: 328 (Aug.) 1932.

The anemia of premature infants also responds to adequate doses of iron. The method of its administration will be discussed later under the heading of iron therapy. Certain other peculiarities of infantile anemias will be discussed under the heading of nutritional deficiencies.

The next general group of deficiency diseases, those due to the deficiency of the "antianemic principle" of Minot, is the group which more than any other has caused recent revision of ideas of the pathogenesis and the classification of anemias. About pernicious anemia itself I shall say nothing at present. I have already discussed certain important features, and so much has been said about it in the last few years that it is an old story.

Close relationship of sprue and pernicious anemia has been suspected for a number of years on purely clinical grounds. Wood¹⁹ showed as long ago as 1919 that in regions in which sprue is common there are many cases which one could with equal plausibility call sprue or pernicious anemia. It is true, however, that in about one half of the cases of sprue some hydrochloric acid occurs in the stomach, and that in a great many of the cases the blood picture is that of the hypochromic rather than of the hyperchromic type of anemia. While before the discovery of liver diet some patients with sprue recovered on certain dietetic treatments, it is now known that the great majority recover on treatment with liver diet or liver extract alone. A few cases are refractory and in some of these recovery takes place when liver extract is given intravenously. A few patients recover only when iron is added to liver. As some patients recover on dietetic measures alone, Castle suggests that in sprue there may be either deficiency of the intrinsic factor (as in pernicious anemia) or of the extrinsic (dietetic) factor. The latter probably are the patients who recover on dietary measures without the addition of the antianemic principle. Finally, in addition to either or both of these factors, he suggests that improper intestinal absorption may play a rôle in some cases and that these are the cases in which recovery occurs only when liver extract is used intramuscularly.

The third form of anemia in which the deficiency of the antianemic principle sometimes plays a rôle is the so-called pernicious anemia of pregnancy. As was pointed out previously, certain cases of pregnancy anemia, and usually the severest cases, present a blood picture closely resembling that of pernicious anemia. These cases may or may not present achlorhydria, but Evans,²⁰ Peterson,²¹ Strauss²² and others have shown that even patients who have hydrochloric acid in the stomach juice may be suffering from a lack of the antianemic principle and may get well promptly on the administration of liver extract.

Lucy Wills²³ has shown in India, where pregnancy anemia is very common and very fatal, that it can be cured not only by liver extract but also in many cases by yeast extract. As both liver and yeast extract contain large amounts of vitamin B₂ (known also as G and discovered first in connection with pellagra), she believes that it is the vitamin content which is important in this type of pregnancy anemia. In a certain num-

ber of cases of pregnancy anemia recovery also occurs, as was shown by Larabee, with persistent transfusion. Whether the transfusions are effective because they supply the necessary vitamin is not certain. There is no doubt, though, that with all these newer methods of treatment at one's disposal the prognosis of this disease (which was said by Minot in 1916 to have a mortality of over 60 per cent) is very much better than formerly.

One difference between the so-called pernicious anemia of pregnancy and true pernicious anemia is that in the former, if the patient recovers after the pregnancy, she remains entirely well without continuance of treatment, although the anemia may recur in subsequent pregnancies.

Most of what was said about sprue and pernicious anemia of pregnancy is also true of *Bothriocephalus* anemia. It has been known for years that only certain of a large number of patients who harbor the broad tapeworm develop severe anemia. Some, but by no means all of these, develop what is to all appearances typical pernicious anemia. The majority, but not all, of those who present the blood picture of pernicious anemia show achlorhydria. From recent work it now appears that these cases also respond to the antianemic principle derived from liver.

It seems then that besides typical pernicious anemia undoubtedly due to the deficiency of the antianemic principle there is a group of cases in which a relative deficiency of this principle plus some other inciting factor such as digestive disturbance, incorrect diet, pregnancy or the broad tapeworm can produce a similar clinical picture. In the case of pernicious anemia, the administration of the antianemic principle apparently has to be continued throughout life. In the other instances, after the anemia has been cured and the inciting cause removed, the patients may remain well without further treatment.

Under the heading nutritional deficiencies are grouped a number of nutritional diseases often accompanied by anemia. In some of these, as the avitaminoses, specific vitamins are lacking; in others the exact causation is obscure. It is a question whether to place here certain infantile anemias, for example, the von Jaksch and the Cooley types; these undoubtedly have nutritional factors, but there may be infectious or constitutional factors also. These infantile anemias are in general severe and show an extremely pronounced bone marrow reaction with changes not only in the red cells but in the leukocytes. Probably because of the demands of growth the anemia very easily reaches an extreme degree.

It has been known to surgeons for a great many years that loss of all the bile through a postoperative fistula, if continued for a long time, produces a very severe grade of anemia. Exactly what constituent of the bile is important is not at all clear. The administration of bile or, according to a recent claim, of bile salts, seems to supply the deficiency.²⁴

The blood picture in the rare cases of stenosis of the small intestine is said to resemble closely that of pernicious anemia,²⁵ but it is not probable that the pathogenesis is the same as that of pernicious anemia.²⁶

19. Wood, E. I.: The Recognition of Tropical Sprue in the United States, *J. A. M. A.* **73**: 165 (July 19) 1919.

20. Evans, William; *Lancet* **1**: 14 (Jan. 5) 1929.

21. Peterson, Reuben; Field, Henry, Jr., and Morgan, H. S.: Liver Treatment in the Pernicious Anemia of Pregnancy, *J. A. M. A.* **94**: 839 (March 22) 1930.

22. Strauss, M. B.: *Am. J. M. Sc.* **180**: 818 (Dec.) 1930.

23. Wills, Lucy: *Lancet* **1**: 837 (April 16) 1932.

24. Balderston, S. V.: Anemia Associated with Biliary Fistula, *Arch. Int. Med.* **50**: 223 (Aug.) 1932.

25. Seydelhelm, R.; Lehmann, W., and Wichels, P.: *Krankheitsforschung* **4**: 263 (May) 1927. Little, W. D.; Zerkas, L. G., and Trusler, H. M.: Chronic Obstruction of the Small Bowel, *J. A. M. A.* **93**: 1290 (Oct. 26) 1929.

26. Meulengracht, E.: *Acta. med. Scandinav.* **72**: 231, 1929.

Nutritional anemia of adults is intended to include those cases of chronic hypochromic anemia in which a history of an extremely one-sided diet (usually consisting largely of starchy foods and lacking in proteins and frequently in vegetables) appears to play a large rôle in causation. These patients improve on iron but usually require correction of the dietary defect as well in order to insure complete recovery.

Aplastic anemias are divided into the so-called primary form and the cases secondary to known poisons. From the clinical similarities there is no doubt that the so-called primary cases are due to undiscovered agents which destroy bone marrow. It is important to know that the same toxic agent, as, for example, arsphenamine, or excessive radiation, may in some instances affect all the elements of the bone marrow, causing deficiency of the red cells, white cells and platelets (aplastic anemia). In other instances it may influence only one element; as for example, the leukocytes, producing pictures of acute leukopenia (agranulocytosis); or the platelets, producing acute hemorrhagic purpura.²⁷ This suggests—what has long been suspected clinically—that there is a close pathogenic relationship between the group of aplastic anemias, the agranulocytoses and the acute purpuras.

The group of anemias secondary to mechanical displacement of bone marrow needs little explanation. Osteosclerotic anemia is of two types: (1) the marble bone disease, a rare congenital disease beginning in childhood and going on to a grave anemia with fatal issue in spite of the myeloid changes in the spleen, liver and elsewhere in the body's effort to make up for the lack of bone marrow, and (2) osteosclerosis of adults, of unknown cause or occurring after prolonged inhalation of silica or other insoluble fine particles.²⁸

The heading anemias due to interference with blood regeneration at some intermediate stage does not require much explanation. It is well known, of course, that material in the blood cells is to a certain extent broken up, conserved in the spleen and liver, and utilized in the reconstruction of blood. It is only natural, therefore, in many diseases affecting these organs that this function is seriously interfered with and that grave states of anemia result.²⁹

The third great group of anemias, those due to hemolysis, are divided into (1) those in which the hemolytic process seems to be due to some inherited defect of the red blood cells themselves and (2) those due to extraneous toxic agents. There are two forms due to inherited defects; hemolytic icterus and sickle cell anemia; the clinical pictures are remarkably similar. The laboratory examinations of the blood reveal striking differences. In hemolytic icterus the fragility of the red blood cells, when tested with saline solutions, is greatly increased; in sickle cell anemia it is normal or the resistance is greater than normal. The correct diagnosis of hemolytic icterus is quite important because the sickness is often curable by splenectomy; unfortunately, this is not true of sickle cell anemia.

The second heading, toxic destruction of blood, includes a very heterogeneous collection of toxic agents. In some cases, as, for example, infection by hemolytic streptococcus or Staphylococcus aureus, definite hemolytic substances are known to be produced by the causative organisms. In others, such as malaria, destruction

of red cells can be watched directly under the microscope. In many other instances, such as cancer, leukemia, nephritis and extensive burns, the intervention of a hemolytic substance is a justifiable assumption but has not been rigorously proved.

Acute febrile hemolytic anemia is an extraordinary and specific disease which has been recognized only in the past eight years.³⁰ It is a rapidly progressive febrile anemia with all the evidence of hemolysis (icterus, sometimes hemoglobinuria). Enlargements of the liver and spleen may occur. There is marked leukocytosis, and the blood is flooded with nucleated red blood cells. Untreated, it has a high mortality, but it responds remarkably well to blood transfusion.

THERAPY

It is interesting to note that almost all the diseases in which dietetic or medicinal therapy of anemia is effective fall in the first general group in the new classification; namely, the deficiencies. It is impossible in the present article to discuss the treatment of anemia in all the diseases in which it occurs. I shall confine myself to discussing certain general principles regarding the use of iron, liver and blood transfusion.

1. *Iron*.—Vital as iron is, it is often not realized how little of it there is in the body. The whole body contains only about 3.5 Gm. of iron, less than the weight of a five cent piece. Of this, about 2.5 Gm. is in the form of blood hemoglobin. Iron is not peculiar to the hemoglobin-containing animals but occurs in all living things. The respiratory pigment present in practically all aerobic cells contains iron. There is only one atom of iron in each molecule of hemoglobin, according to the researches of Wilstatter, Anson and Mirsky and others, and it appears that one molecule of hemoglobin combines with one molecule of oxygen.³¹

There is some difference of opinion as to whether the effect of iron is due to stimulation of blood production or to the supplying of a real iron deficiency. The recent trend of opinion is strongly to the deficiency view. It is true that the doses which have to be given by mouth in order to obtain hemoglobin increase are enormously larger than the amount which is absorbed, and enormously larger than the minimal daily requirement of the body, which is only about from 6 to 12 mg. of iron. In all likelihood, however, this is due to the fact that iron is a substance which is absorbed with difficulty; only a small percentage of that taken by mouth is ever absorbed. Heath, Strauss and Castle¹⁰ showed that with intramuscular injection of iron in hypochromic anemia patients the injected iron was almost quantitatively used in the making of hemoglobin. They found that the 32 mg. of iron which it was necessary to inject daily in the form of a 10 per cent solution of iron citrate, in order to get a maximal hemoglobin regeneration, was about equivalent in therapeutic effect to 1,000 mg. of iron taken by mouth in the form of 6 Gm. of iron and ammonium citrate. These authors, like Rabschewitz-Robbins, Witts and many others, found that while the oral dose required is large compared with the amount actually utilized by the body, there is always an optimal dose of iron by mouth; and increase of iron above this optimal dose does not lead to greater hemoglobin production.

How fast a hemoglobin production can one expect under the influence of iron treatment?

27. McCarthy, F. P., and Wilson, Robert, J. *The Blood Dyscrasias Following the Arspenamines*, J. A. M. A. 99:1557 (Nov. 5) 1932.
28. Chapman, E. M.: *Am. J. M. Sc.* 185:171 (Feb.) 1933.
29. Jones, C. M.: *Blood Pigment Metabolism and Its Relation to Liver Function*, Arch. Int. Med. 29:648 (May) 1922.

30. Lederer, Max: *Am. J. M. Sc.* 179:228 (Feb.) 1930.
31. Peters and van Slyke: *Quantitative Clinical Chemistry* 1:519, 1931.

This depends largely on the initial level of hemoglobin. When it is very low, the percentage increase is quite rapid if the therapy is having a proper effect, approximately 2 per cent of hemoglobin a day. As the percentage gets higher, the rate of increase slows down.

What is the best form of iron to use by mouth? All recent workers agree that organic iron compounds have no advantage over inorganic. Experience has shown that if the dose is very large it does not make much difference which form of inorganic iron is used. A number of careful studies, however, particularly those of Starkenstein,³² indicate that ferrous iron is superior (in proportionate dose) to ferric. The solubility of the preparation undoubtedly plays a very decisive rôle, and this probably explains why the amount of iron needed in the form of reduced iron (which depends for going into solution largely on the hydrochloric acid of the stomach) is proportionately larger than other forms of iron. Thus Witts³³ showed that in hypochromic anemias the effective doses of metallic iron, ferric iron and ferrous iron are as given in table 3.

Closely connected with the question of the preparation of iron is the question of the hydrochloric acid of the stomach. Achlorhydria predisposes to iron deficiency. The poor absorption of iron in the absence of hydrochloric acid applies not only to inorganic iron

is toxic or is extremely close to the toxic limit. Even if one were to give such a dose close to the toxic limit (and no one does), it would have to be injected daily. If given intramuscularly, it would produce local and, if given intravenously, severe general reactions. The only justification for the injection treatment of iron would appear to be in rare cases in which severe gastrointestinal disturbances make sufficient absorption from the intestine improbable. Iron seldom upsets the digestion, and even its reputed constipating effect is rather doubtful.

The recent experimental proof that minute amounts of copper are necessary in order to get the full effect of iron has led to the widespread addition of copper sulphate to iron in the treatment of hypochromic anemias. There is a good deal of doubt at present whether this is clinically necessary or justifiable. It must be remembered that the amount of copper needed is so small that its effect was discovered only when extraordinary and special precautions were made to remove all traces of copper from the food and from the administered iron. The ordinary preparations of iron and the ordinary diet probably contain all the copper that is needed; and as copper sulphate is somewhat upsetting to the digestion, it is questionable whether copper is a necessary addition to the therapeutic armamentarium.

The clinical reputation that some other metals, such as manganese and particularly arsenic, formerly enjoyed does not seem to be substantiated by recent research; while the last word has not been said, particularly about arsenic, at present its use in anemia is regarded as of questionable value.

TABLE 3.—Effective Doses of Metallic, Ferric and Ferrous Irons

	Minimum Effective Dose	Iron Content
Reduced iron (metallic).....	1.5-3.0 Gm.	1.2-2.4 Gm.
Iron and ammonium citrate (ferric).....	4.0-8.0 Gm.	0.8-1.6 Gm.
Iron pill (ferrous)	2.0-3.0 Gm.	0.2-0.3 Gm.

as shown in the experiments of Mettier and Minot already referred to but also to the iron of vegetables as shown in the experiments of Mitchell and Miller.³⁴

Naegeli has shown cases in which blood regeneration on iron therapy commenced only when hydrochloric acid was added. On the other hand, as Witts points out, when the more soluble preparations of iron such as iron and ammonium citrate are used, hydrochloric acid is not needed and produces no increase of effect (excepting when minimal doses of iron are given). The so-called massive doses of iron which have been regarded as necessary, especially in the Scandinavian countries and in Germany, are reduced iron (i. e., metallic iron) and are massive not in the actual amount given (6 Gm., that is, 90 grains or more a day, according to Schulten³⁵) but in the amount of iron, as the preparation is practically pure iron. For practical purposes the best preparations seem to be ferrous carbonate (in the form of the familiar Bland's pill or saccharated ferrous carbonate powders) or, particularly for children because of its ease of administration, iron and ammonium citrate in 25 per cent solution. For infants, the dose of this citrate is from 5 to 10 grains (0.3 to 0.6 Gm.) a day; for adults, from 60 to 120 grains (4 to 8 Gm.).

Iron should be given by mouth and not by injection. Examination of the actual amount of iron in all the preparations that are suitable either for intramuscular or intravenous injection has shown that it is impossible to give sufficient amounts of iron unless the dose given

2. *The Antianemic Principle.*—In the six or seven years since the introduction of the antianemic principle derived from liver for pernicious anemia and allied diseases there has been great improvement in the method of its use. The dosage is now standardized approximately by comparison with the effect to be anticipated from known amounts of whole liver taken by mouth. Thus the most widely used preparation, liver extract No. 343, is marketed in 5 Gm. vials each of which contains the equivalent of about 60 Gm. of liver (although it is prepared from 100 Gm. of liver, the difference being due to the loss in manufacture). With preparations made for intramuscular and intravenous use, it is customary for the manufacturer to state the approximate equivalent of liver from which the extract is derived. In the case of desiccated hog stomach and of other newer preparations derived from liver or stomach or both, the dosage has been arrived at by comparison with the therapeutic result of liver or the earlier liver extracts. Thus, one of the manufacturers has now a preparation to be given by mouth and derived from both liver and stomach which is claimed to be approximately three times as potent per unit of weight as the ordinary liver extract. The dose of liver or liver extract needed to reach and maintain a normal blood count varies from patient to patient. In a general way the equivalent of from 300 to 500 Gm. of liver a day is needed when the preparation is given by mouth.

Beebe and Lewis³⁶ at the Thorndike Laboratory in Boston divided 108 cases of pernicious anemia which they studied very carefully into four groups. The first and largest group of sixty-four patients required only from 100 to 400 Gm. equivalent a day to maintain a

32. Starkenstein, E.: *Med. Klin.* 25:1720 (Nov. 1) 1929.

33. Witts, L. J.: *Proc. Roy. Soc. Med.* 24:550 (March) 1931.

34. Mitchell, H. S., and Miller, L.: *J. Biol. Chem.* 85:355 (Dec.)

1929.

35. Schulten, Hans: *München. med. Wchnschr.* 77:355 (Feb. 28) 1930.

36. Beebe, R. T., and Lewis, G. E.: *Am. J. M. Sc.* 181:796 (June) 1931.

normal blood count after having once reached it. This group contained essentially the younger individuals (the average age being 45 years) and those showing few complications, such as infections, arteriosclerosis or neurologic manifestations. The second, the next largest group, thirty-one patients, were able to remain normal on an equivalent of from 500 to 1,000 Gm. This group averaged 60 years in age. A third group of five patients were not able to remain quite normal even on doses of liver up to an equivalent of 1,500 Gm. even when iron was added. The average age of this group was 69 years. The fourth group was composed of eight patients who were unable to reach normal on liver alone but did so when iron was added to their treatment. These cases all showed some dietary deficiency in their history and were probably combinations of pernicious anemia with a secondary nutritional anemia.

It is extremely important in each case to find out how much liver extract is needed to maintain a normal blood picture and then to give a dose decidedly above this amount, because it is known that the material is stored in the body, and it is also certain that intercurrent diseases such as infections and alimentary disturbances increase the need for the antianemic principle. The patient should be fortified against such occurrences. It has been noted by every one that the patients requiring very large doses are almost always those suffering from complications. This is particularly true of the neurologic complications; and, while it is impossible to produce regression of combined sclerosis when once established, by liver administration in any form, there is no doubt that sufficient liver to maintain a normal blood picture retards, if it does not arrest, the progress of such a sclerosis. On the other hand, carelessness of administration of liver in such cases frequently leads to rapid progress of the neurologic disease. It is possible that some of the cases of pernicious anemia that are refractory or that require excessive dosage are cases in which the antianemic substance is poorly absorbed from the gastro-intestinal tract. The recent introduction of liver extract which can be administered intravenously or intramuscularly may be a valuable asset in treating these cases.

Just as in the case of iron, so with the antianemic principle, the amount that has to be given by mouth is enormously greater than the amount that is actually absorbed and utilized by the body.

Gänsslen,³⁷ for example, found that 2 cc. daily of his purified preparation by intramuscular injection was the equivalent of from 300 to 500 Gm. of liver by mouth. This 2 cc. was prepared from only 5 Gm. of fresh liver, so that by this method a course of several months' treatment can be carried out with as much liver as the patient would otherwise consume in one day.

Castle and Taylor,³⁸ giving intravenously a purified form of fraction G (the equivalent of liver extract, No. 343) obtained the astonishing result that one injection containing the equivalent of 100 Gm. of liver was sufficient to produce one million red blood cells per cubic millimeter in ten days. The intramuscular and intravenous treatment of pernicious anemia, however, has many inconveniences and should be reserved for patients refractory to oral treatment or for persons who find it inconvenient on other grounds. It may be

remembered also that Wenberg showed that liver extract is effective when given by rectum.

The antianemic substance of Minot in general is of use only in pernicious anemia and the related diseases. There is a good deal of clinical and experimental evidence that whole liver is of considerable use as an adjuvant to iron in many cases of other types of anemia. Whipple and Robschey-Robbins have fractionated liver and have found that the fraction which contains the accessory substances is largely mineral and is quite different in its properties from the antianemic substance of Minot. Such an extract has recently been put on the market for the treatment of hypochromic anemia. There has not yet been sufficient clinical trial to make the results certain.

3. *Blood Transfusion.*—This is essentially an emergency measure. It is useful in patients acutely ill when first seen, in tiding very anemic patients over critical periods, such as the later months of pregnancy or surgical operations, and, in general, in all situations in which an extremely rapid improvement is urgent. This applies particularly to the first general group of anemias in my classification, the deficiency diseases, in which blood transfusion is needed practically only in such emergencies. In the second general group, particularly in the cases of bone marrow destruction, transfusion is almost the only means that are at present available of overcoming the anemia; and in instances in which there is any hope at all that the natural progress of the disease may reach an end (as, for example, in some cases of aplastic anemia, particularly those due to arsphenamine and allied substances), persistent use of blood transfusion will sometimes keep the patient alive until marrow regeneration occurs.

In the third group of anemias, those due to hemolysis, transfusion again is often of use as an emergency measure to tide the patient over until some other procedure can be used, such as splenectomy in the case of hemolytic icterus. In acute febrile hemolytic anemia, transfusion seems to be specifically curative. In almost all the other diseases included in the third group, medicinal or dietetic therapy, iron and liver extract fail completely, and the only real cure is the removal of the cause in those cases in which that can be accomplished.

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Practice From the Homes.—It is stated that the services of the family physician can be improved by coordinating him in a group together with the specialist, in association with and under the control of a non-profit-making corporation, such as a hospital. The assumption is that the consumer requires in a majority of instances the services of various specialists and of expensive plant, this making it more economical to bring at once the family physician and his clients to a central point where these are available. Moreover, it is also assumed that by such organization the requisite service could be provided far more economically than is done now. The majority of family physicians at the present time practice from their homes, where the overhead for office rent, transportation and incidental expenses is to a considerable extent included in the necessary charges for shelter, transportation and other needs of himself and family. Moreover, the expense of setting up the necessary office equipment and apparatus for the care of the illness with which he deals is minimal. In other words, the charges of plant are a very small fraction of the cost of his service. To bring him into a group renders these fixed charges a major fraction of the cost of his services, and the net result must be either increased charge for service or less net return to the physician.—Harvey, S. C.: *Oikonomia Medika*, *Yale J. Biol. & Med.* 5:323 (March) 1933.

37. Gänsslen, M.: *Klin. Wehnschr.* 9: 2099 (Nov. 8) 1930.

38. Castle, W. B., and Taylor, F. H. L.: *Intravenous Use of Extract of Liver*, *J. A. M. A.* 96: 1198 (April 11) 1931.

THE ECONOMIC BURDEN OF
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The suffering, the prolonged hospitalization and the great cost of osteomyelitis are obvious to those who have followed these patients through their hospital courses. There have been no studies that have brought out the marked economic loss entailed by this disease. A survey of the cases of osteomyelitis treated at the University of Virginia Hospital presents such a striking demonstration of this enormous economic burden that a presentation of the figures is thought to be worth

TABLE 1.—Classification of Cases

Group A	Patients hospitalized first at University of Virginia Hospital; treated at home first but without operation on the bone.....	154 cases
Group B	Patients hospitalized elsewhere for treatment first, including 30 patients operated on at home.....	98 cases

while. It is particularly worth while if it can be felt that earlier diagnosis and treatment can help decrease the expense to the patient and to the hospital. The moral of this report will then become obvious.

This study is limited to those cases of acute, pyogenic osteomyelitis of hematogenous origin, usually seen in children and most frequently caused by the staphylococcus. Other bone infections, including tuberculosis, traumatic osteitis, and osteitis originating in arthritis, are not included.

The economic cost of any disease is made up of a number of different factors, which may be divided into those affecting the hospital and those affecting the patient and, through the patient, the state; the latter is by far the most important. In the case of the well-to-do patient, the hospital cost of any illness is generally absorbed by the patient or his family. With increasing degrees of poverty, the burden rests more and more on the hospital. It is the general impression, and the figures given later bear this out, that osteomyelitis is rare in the well-to-do, and that it is usually seen in more or less destitute individuals. In the consideration of osteomyelitis, therefore, the cost to the hospital becomes a major factor.

The hospital cost, exclusive of the physician's charges, includes:

- The cost of each hospital day.
- The cost of drugs and dressings.
- The cost of special procedures; i. e., the operating and plaster room charges.
- The cost of laboratory procedures, including roentgenograms.

The expense to the patient is made up of:

- The cost of medical attention, including the hospital bill.
- The loss of time from work due to the acute illness.
- The total loss of time from work, and the loss of quality of work because of prolonged chronic illness and deformity.
- In the case of children, the economic loss due to interference with education.
- In addition, a loss to the community through death. This will be seen to be of importance.

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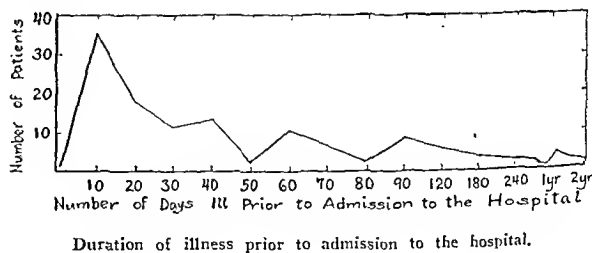
The figures to be presented will bear especially on the hospital cost and on the cost to the patient of the acute illness. They will also suggest something of the economic loss from chronic disease and the resulting deformities.

Up to January 1930 there were 252 cases of osteomyelitis treated in the University of Virginia Hospital. These have been divided into two groups, as shown in table 1.

Because of lack of accurate knowledge of previous treatment, the cases in group B cannot be analyzed closely with profit. They have been tabulated in order to bring out certain points to be discussed later. The chief facts for the present thesis are to be gathered from group A, which has been analyzed in detail in table 2.

In table 2 the column headings are self-explanatory with the exception of those in columns 8 and 9; by total cost to the patient is meant the total of bills rendered the patient on discharge. To determine the hospital cost to the patient, ten unselected records were examined. Some of these patients were paying the full ward rate and some were paying a smaller rate. The total number of hospital days for this group was divided into the total amount charged this group. The factor thus obtained, \$2.19, is considered a fair average of the daily hospital charge for patients in this group, including the charges for dressings and roentgenograms. To determine the total hospital bill for each patient, the number of hospital days has been multiplied by this factor. In this entire group there was only one patient (private) who was charged for the medical attention received.

The total figures show that for an average stay in the hospital of 94.6 days, the average cost to the patient was \$207.17. Over a long period of time, it has been found that the average per capita cost at the University Hospital is about \$4 a day. This is the basic figure used in estimating the cost to the hospital, shown in column 9 (table 2). It is obvious that it costs the hospital \$378.49 to care for a patient for 94.6 days, though this patient has been charged only \$207.17. Assuming that the patient with osteomyelitis pays his entire bill, there is a loss to the hospital that averages



in this series \$161.32. Unfortunately, such an assumption is entirely unwarranted in this institution. It has been stated that most children with this disease come from families unable to bear this burden, and when this is the case there is an additional loss to the hospital. It is difficult to estimate this amount. The figures shown in table 3 will give some idea of this additional cost. Nineteen unselected cases from this group were investigated. Of these, in seven cases the hospital frankly assumed the entire burden. Of the remaining twelve patients, three have not paid bills. Comparing the amount paid to the cost to the hospital of these

patients as estimated in table 2, it is found that 82.9 per cent of the cost of hospitalization is borne by the hospital alone. These facts are shown in table 3.

The administration of the hospital sees no prospect of diminishing this loss in these instances. If this percentage carries through the entire series, it becomes clear that the net cost to the hospital shown in column 10 is grossly underestimated. It should by this reasoning approximate \$350 per patient.

In estimating the money loss to the patient from the acute illness, one must consider other factors besides

cal attention has been necessary during this interval. The average number of previous hospital admissions had been one plus. Thirty of these patients had had some type of operation directed at the bone, even though they were not hospitalized, and are therefore included in this group. The previous experience of these patients compares very closely with that of the patients in group A. This table shows that the chance of additional hospitalization averaging 53.6 days, at an average cost of \$147.54, faces the members of group A.

TABLE 2.—Analysis of Group A

Bone Primarily Involved	Number of Cases		Days of Illness at Home Before Admission to Hospital		Number of Admissions		Number of Operations		Number of Casts		Number of Days in Hospital		Total Cost to Patients of Hospitalization		Cost to Hospital		Loss to Hospital, Assuming All Bills Paid		Deaths		Healed After Amputation		Healed with Shortening		Healed with Ankylosis		Total Deformities	Percentage of Deformities
	Total	Aver. per Patient	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
Tibia	67	10	5,370	80.1	103	1.5	107	1.6	13	5,492	81.9	12,027.48	179.36	21,968	327.88	7,103.0	148.52	4	5.9	2	2.9	2	2.9	6	8.9	10	14.52	
			Longest, 2 yrs. Shortest, 4 da.																									
Femur	46	5	3,156	68.6	69	1.5	70	1.7	11	5,558	120.8	12,172.02	264.35	22,232	483.30	7,492.0	218.75	9	19.5	2	6.5	2	...	5	10.8	10	21.74	
			Longest, 2 yrs. Shortest, 1 da.																									
Humerus	19	5	1,065	56.0	36	1.5	39	2.5	2	2,925	122.3	5,091.75	267.83	9,300	489.47	3,087.5	221.64	1	5.3	0	0.0	1	5.3	5	26.3	6	31.57	
			Longest, 1 yr. Shortest, 4 da.																									
Other long bones	6*	1	90	15.0	10	1.6	14	2.3	0	366	61.0	791.54	133.59	1,464	244.00	400.0	110.41	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
			Longest, 42 da. Shortest, 3 da.																									
Miscellaneous	16†	5	1,512	94.5	20	1.3	22	1.4	0	831	51.9	1,819.89	113.66	3,324	207.75	1,237.0	94.90	1	6.25	2	12.5	0	0.0	0	0.0	2	12.5	
			Longest, 330 da. Shortest, 4 da.																									
Totals	154	26	11,193	72.6	238	1.5	261	1.6	26	14,572	94.6	31,912.68	207.17	58,288	378.49	19,328.5	161.32	15	9.7	7	4.5	5	3.2	16	10.4	28	18.11	
			Longest, 2 yrs. Shortest, 1 da.																									

* Ulna, 1; radius, 2; fibula, 3.

† Astragalus, 1; os calcis, 4; metatarsal, 5; pubis, 1; scapula, 1; rib, 4.

the hospital cost. Column 3 of table 2 shows that the patients of this group were ill at home for an average of 72.6 days. This figure is high on account of a few patients who were ill over a year. The chart shows that nearly half of these patients were admitted within three weeks of the onset of their illness. Though no accurate estimate of the cost of medical and nursing care during this period of home treatment can be determined, it is an item of no small amount, which must be included in the total cost to the patient. Even though the patient or his family cannot pay the hospital bill, the average amount of \$207.17 must be charged to him. Parenthetically, it may be remarked that, from the clinical point of view, it is appalling to find about three fourths of these patients sent to the hospital after a week of illness. This fact, of course, has its economic sequel, as will be pointed out.

The direct money loss to the patient or his family, which has been defined as closely as possible in the preceding paragraphs, is not the entire direct money loss. Discharge from the hospital rarely means cure. To gather some idea of what this later loss may be, one must turn to the cases admitted to this hospital after treatment elsewhere, often years previously; namely, those of group B in table 1.

Table 4 presents a partial analysis of this group; it is to be noted that the disease has lasted an average of twelve years and seven months. Doubtless, some medi-

The economic burden arising from loss of working time must next be discussed. Most of the patients in group A are children. It is difficult to attach any monetary value to their time. However, the services of a child in the home, on the farm or in industry are valuable, and particularly is this true in families in which poverty is present. With an average duration

TABLE 3.—Cost to Hospital of Nineteen Unselected Patients

Number of Patients	Number of Patients Charged Full Ward Rate	Number of Patients Charged Smaller Rate	Number of Patients Admitted as Free Patients	Total Money Paid by Group	Cost of Group to the Hospital	Loss to the Hospital
19	9	3	7	\$1,162.75	\$6,788.00	\$5,625.75 82.9%
	Bills paid, never paid, 6	Bills paid, never paid, 3				

in the chronic cases of over twelve years, many of these children are still handicapped when the self supporting period of life is reached.

The chronicity of osteomyelitis is well known. The loss of time because of reopening sinuses, or the protracted drainage of wounds cannot well be measured, though that loss must be great in a condition that has persisted, as in group B, over an average period of more than twelve years.

Nor can the economic waste due to crippling deformity be measured. In a group of people most of whom find their livelihood in manual labor, amputation, ankylosis of a joint or the shortening of an extremity may mean the difference between self support and dependence. Table 5 shows the incidence of these deformities in group A as compared to group B. It is perhaps striking that while ankylosis occurs in 10.4 per cent of the cases during the early acute infection, it occurs in 12.2 per cent of the late cases in group B. That deformities, escaped at first, may come later, during acute recurrences of the disease, only serves further to increase the ultimate burden of osteomyelitis. Nearly 20 per cent of this series of acute cases have a

of medicine to bend every effort in preventing its ravages.

It has been repeatedly stated that early diagnosis and immediate operation offer the best chance of minimizing the protracted period of disability, as well as decreasing the number of deformities of the late chronic form of the disease. To emphasize the importance of early intervention, many experienced surgeons have stated that, for each hour's delay in operating, the course of the disease is prolonged by from four to six weeks. In spite of this general attitude among surgeons toward osteomyelitis, few patients are hospitalized early. In this entire series, only one patient was admitted on the first day of the disease. In the

TABLE 4.—Analysis of Group B

Total Cases	Time Since Onset of Initial Acute Infection		Previous Hospital Admissions		Previous Operations		Number of Days in This Hospital	Admissions to This Hospital, Average per Patient	Number of Operations, Average per Patient	Expense in This Hospital, Average per Patient	Mortality, per Cent	Ankylosis, per Cent	Amputations, per Cent	Shortening, per Cent	Total Deformity, per Cent
	Total	Average per Patient	Total	Average per Patient	Total	Average per Patient									
85	1,232 Yrs. 6 Mos.	12 Yrs. 7 Mos.	100	1+	102	1+	53.6	1.3	1.3	147.54	3.06	12.2	5.1	2.04	19.35
Longest time = 66 Yrs. Shortest time = 1 Yr.															

crippling deformity. With the 10 per cent of deaths, this places nearly a third of the victims of this disease outside the class of normal individuals.

One other element in the economic burden to the individual must be considered. The usefulness of the man depends largely on the completeness of his education during childhood. The average total loss of time during the early period of the disease, as shown in table 2 (group A), is 5.5 months, which is the equivalent practically of an entire year in school. The protracted nature of the disease, the frequency of recurrence necessitating hospitalization, as indicated in table 5, may well deprive a child of most, if not all, of his early schooling. Again this loss cannot be measured.

Lastly, the money cost to the family through the death of a child: Dublin and Lotka¹ have estimated the cost of bringing a child up to adolescence in a family whose income is about \$2,500 a year. The total cost of bringing the child up to 18 years is given as \$10,485. In group A of this series, the average age of these patients at the onset of their disease is 11 years 8.9 months, roughly 12 years. In table 2 on page 39 of Dublin and Lotka's book is given the total cost of bringing a child up to this age, which is \$5,896. In preparing these figures, the authors have made an allowance for the cost of illness. This figure may be taken, then, to represent the total cost of the child dying at the age of 12 years.

COMMENT

The measurable factors in the economic burden imposed by osteomyelitis, namely, the costs of hospitalization, which have been presented, and the other factors not so closely measurable, which have been enumerated and their degrees suggested by related figures, present a total picture that is appalling. When to it is added the patient's pain and the parental worry and grief, osteomyelitis presents itself as a major scourge. It is obviously the duty of every practitioner

majority of cases, then, there has already been considerable bone destruction before treatment is begun, and, regardless of the type of treatment, the disease usually runs a protracted course.

It is impossible to show by this study that early diagnosis with prompt and adequate surgery would decrease the morbidity of osteomyelitis. Those variable factors, the virulence of the infecting organism and the resistance of the host, will always influence the course and outcome of any individual infection. However, all surgeons have seen a few early cases that have made a prompt and complete recovery following early intervention. There being no other means now at hand whereby the length of the disease may be shortened or the economic burden lightened, I feel justified in renewing the plea for early diagnosis.

TABLE 5.—Percentage of Cases Terminating in Death or with Deformity

	Group A	Group B
Death.....	9.7	3.06
Ankylosis.....	10.4	12.20
Amputation.....	4.5	5.10
Shortening of extremity.....	3.2	2.04
Total deformities.....	18.1	19.35

SUMMARY

1. The course of pyogenic osteomyelitis is prolonged.
2. Figures have been presented to show the cost to the hospital in caring for patients with this disease as well as the cost of medical attention and hospital care to the patient.
3. There is an additional economic burden to the patient because of loss of time due to the initial acute infection, loss of time and loss of quality of work due to prolonged chronic illness, and frequently deformity.
4. In the case of children, there is a loss due to interference with education.
5. Few cases are seen early. Earlier diagnosis is suggested as the only means at hand for decreasing the burden of osteomyelitis.

1. Dublin, L. I., and Lotka, A. J.: *The Money Value of a Man*, New York, Ronald Press Company, 1930, p. 22.

THE 1932 THALLOTOXICOSIS OUT-
BREAK IN CALIFORNIA

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Following the exposure of human beings to various products containing thallium, prepared for rodenticidal or clinical use, a number of untoward effects have been reported during the last few years. In addition to alopecia, the principal effects reported have been stomatitis and gastro-enteritis, diarrhea and constipation, peripheral neuritis, retrobulbar neuritis and endocrinologic disturbances.¹ In 1924, an intensive study of the pharmacology of thallium was instituted by the Bureau of Biological Survey on animals which led to the development of an antidote for thallium poisoning and to definite information regarding its physiologic actions.

"Thalgrain" was prepared by official agencies to contain 1 per cent of thallium sulphate and distributed in certain areas in ten counties in California for assistance in controlling ground squirrel infestation.² Following its use on a small scale in 1925, the amount of such material has been increased annually until 1928, since which time progressively smaller quantities have been used.

The antidotal treatment developed had been used on animals but had never been tested on human beings until the present outbreak. Other investigators have studied the treatment of thallotoxicosis. Sodium thiosulphate has been reported as successful, or at least as useful,³ although other workers have denied obtaining any benefit.⁴ Pilocarpine has been used alone⁵ or in combination with sodium thiosulphate.⁶

In our studies on antidotal treatment, the reasoning followed our knowledge of the chemical behavior of thallium compounds: 1. Thallous sulphate is readily soluble in water (4,000 mg. per liter), whereas thallous iodide is very much less soluble (125 mg. per liter).⁷ Experiments were undertaken with intravenous injections of sodium and potassium iodide with the hope of converting the soluble thallous compounds into the insoluble iodide. To avoid the depressant action of potassium salts, sodium iodide was preferred, even though less available. To follow the degree of fixation, the decrease or disappearance of thallium from the urine was determined by the changes in intensity of

green color when the residue from the twenty-four hour urine was brought in contact with a nonluminous flame. 2. After fixation, elimination of the thallous complex was produced by intravenous or oral administration of sodium thiosulphate. When too large a dose was given, symptoms of acute thallium poisoning developed, which were removed by another injection of sodium iodide. 3. Disturbances of calcium metabolism, possibly related to parathyroid injury, have been reported. The injection of soluble calcium salts was therefore instituted. 4. To combat endocrinologic depression, which had been frequently observed, pilocarpine was used.

HISTORY OF OUTBREAK

With the exception of an outbreak of thallium poisoning in California in March, 1931, which was not diagnosed as such at the time but in which the cases were treated for "heavy metal poisoning," with complete recovery of five adults and the death of a 15



Fig. 1.—Container and labels placed on thalgrain.

months old infant who failed to show characteristic thallium effects on postmortem examination,⁸ no outbreak of thallium poisoning has occurred in this country.

In this outbreak, a Mexican laborer illegally procured a 100-pound bag of thalgrain (fig. 1) from a locked official warehouse. The grain was distributed to several Mexican families, ground, and the barley flour used in the preparation of tortillas. The various housewives noticed that the material had a peculiar coating and contained discolored grains and debris. Tortillas made from the material fell apart. To correct this, some sound wheat flour was mixed with the thalgrain barley flour and the material eaten by two families.

1. A family in Selma, consisting of at least fourteen persons, consumed from one to four tortillas each at the evening meal, January 12. Two children, who had eaten the most, were ill the next morning, so the uneaten tortillas and the remaining grain were buried. Thirteen members were hospitalized in the General

From the Bureau of Biological Survey, Washington, D. C., and the General Hospital of Fresno County.

1. Munch, J. C.: The Toxicity of Thallium Sulphate, *J. Am. Pharm. A.* 17: 1086-1093, 1928. Buschke, A., and Peiser, B.: Die biologischen Wirkungen des Thalliums, *Ergebn. d. allg. Path. u. f. subakute klin. Wehnschr.* 40: 967-970 (July 28) 1927.

2. Kellogg, E. S.: The California Ground Squirrel Control Program, Spec. Pub. 109, Dept. of Agri., State of California, 1931.

3. Bogdanov, S., and Lasko, N.: Zur Thalliumbehandlung der Pilzerkrankung und zur Behandlung von Thalliumzwischenfällen mit Natriumthiosulfat, *Vrac. Delo* 11: 304-306, 1928. Mrongowius, J., and Duchan, G.: Zur Frage der Vermeidung der Komplikationen bei der Thalliumtherapie, *Dermat. Wehnschr.* 87: 1834-1835 (Dec.) 1928. Caluzzi, N.: Il tiiosolfato di sodio quale antidoto del tallio nelle cure epilatorie, *Dermosiflografo* 4: 399-402 (Aug.) 1929.

4. Buschke, A.; Duchan, G., and Joseph, A.: Ueber die Anwendung des Natriumthiosulfates zur Verhütung der Komplikationen bei der Thalliumtherapie, *Dermat. Wehnschr.* 87: 1835-1837 (Dec. 1) 1928.

5. Lenartowicz: Thalliumacetat als Epilationsmittel, *Przegl. dermat.* 22: 256-270, 1927 (cited by Buschke and Peiser).¹

6. Mrongowius and Duchan.³ Caluzzi.³

7. Mellor, J. W.: A Comprehensive Treatise on Inorganic and Theoretical Chemistry, London, Longmans, Green & Co. 5: 406-479, 1924.

8. Robinson, Joseph, and Tock, E. W.: Personal communications to the authors.

Hospital of Fresno County between January 14 and January 24. The details of the symptoms, treatment and outcome are given in table 1. Two mothers and four children died before January 28. The patients refused to cooperate, and incomplete histories were obtained. It was not until January 22 that friends of the patients brought in some of the tortillas and with the assistance of County Agricultural Commissioner Roullard, Chief State Rodent Control Officer Jacobsen, and the chemical laboratories of the California State Department of Agriculture, and the bureau, the material was identified as thalgrain. A preliminary report on these patients has been published.⁹

2. A family in Tipton, consisting of at least seventeen persons, consumed an unknown number of tortillas daily for a week. A girl, who ate about three times as many tortillas as any of the others, was hospitalized, lost the cranial hair and developed a unilateral left-sided paralysis. The same treatment was used by the



Fig. 2.—Complete loss of cranial hair following consumption of tortillas prepared from thalgrain.

superintendent of the Tulare Hospital, Dr. Kohn, as was used in the Fresno hospital (table 1). In all, over thirty-one persons were exposed, fourteen were hospitalized, and six died from acute thallium poisoning. Another death occurred almost two months later, but it was not certain that thallium was responsible. Symptoms of thallium poisoning developed in twenty-two persons; alopecia (fig. 2) and pains in the legs and feet were the chief symptoms.

TREATMENT

The general principles of the treatment of thallium poisoning in man are:

1. If the patient is seen early, the stomach should be emptied by lavage or by use of emetics (mustard or apomorphine). Cathartics are used to eliminate unabsorbed material from the gastro-intestinal tract. It may be dangerous to use cathartics that contain sulphates, since the insoluble thallium compounds fixed in the

gastro-intestinal tract may react with sulphates and become soluble.

2. In the acute cases, when the patient is in shock, 25 Gm. (50 cc.) of dextrose should be given intravenously, heat applied to the extremities, and caffeine sodiobenzoate, epinephrine, or aromatic spirit of ammonia given, as deemed necessary.

3. Fixation should be started immediately after it is learned that thallium poisoning is being treated. Intravenous injections of iodides are indicated to convert the toxic soluble thallium salt to a practically insoluble iodide. Owing to its depressant action, potassium iodide should not be used if sodium iodide is available. From 5 to 15 grains (0.3 to 1 Gm.) of sodium iodide should be given intravenously daily and, at the discretion of the attending physician, the dose may be increased to from 25 to 40 grains (1.6 to 2.6 Gm.), or even more. The iodides are continued until urinary examinations reveal that practically no thallium is being excreted (the residue obtained by flaming the residue of a twenty-four hour sample gives only a slight green color).

4. For elimination, intravenous injections of sodium thiosulphate may be given. This should not be given by mouth. The object is to convert a nonsoluble thallous iodide gradually to a soluble thallous compound, and to remove it rapidly from the body. A dose of from 0.3 to 1 Gm. may be given to an adult, and proportionate doses to children. Twenty-four hour urine samples are collected daily and the flame test applied to make certain that too rapid elimination is not produced. Should thallotoxicosis again develop (as a result of too rapid mobilization of bound thallous iodide) with as small a dose of sodium thiosulphate as 0.3 Gm., from 0.3 to 1 Gm. of sodium iodide should be injected intravenously and natural elimination awaited.

If thallotoxicosis does not develop and the urine test shows very little thallium following the initial thiosulphate treatment, then it is recommended to increase cautiously the thiosulphate, very careful checks being made on the urine. Injections of thiosulphate are discontinued when the daily flame test for a twenty-four hour urine, over a period of three days, shows that elimination is practically complete.

5. To promote secretory activities, pilocarpine hydrochloride in doses of 5 mg. is given to hospital patients, beginning about the third or fourth day, and continued at the discretion of the attending physician. It should not be given to ambulatory patients or to patients suffering from pulmonary congestion.

6. Disturbances in calcium metabolism are treated by the use of from 20 to 40 grains (1.3 to 2.6 Gm.) of calcium salts (chloride, lactate or gluconate) given daily during the period of elimination and continued at the discretion of the attending physician.

7. Purely symptomatic treatments indicated are:

(a) One drachm (4 cc.) of dilute hydrochloric acid before each meal to overcome the achlorhydria or hypochlorhydria found in thallium poisoning.

(b) Fluids freely, especially milk, which is rich in calcium salts.

(c) Bland ointments for the dermatitis about the mouth.

(d) Amytal, 0.1 Gm.; sodium bromide, 1 Gm.; codeine or morphine for restlessness and pain.

(e) Cod liver oil and nutritious food.

(f) Mechanical restraints, if necessary, in mental cases.

(g) Sponges for high temperature.

⁹ Ginsburg, H. M., and Nixon, C. E.: Thallium Poisoning, J. A. M. A. 98: 1076-1077 (March 26) 1932.

TABLE 1.—Symptoms, Treatment and Outcome of Thallotoxicosis Outbreak in Selma Family

Case	Patient	Sex*	Age, Years	In- gested Thal- lium (1932)	Onset of Sym- ptoms (1932)	Admis- sion to Hospital (1932)	Symptoms and Observations	Treatment	Course
1	N. N.	♀	32	1/12	1/13	1/14	Nausea; vomiting; epigastric pains; pains and paresthesia in extremities; reflexes hyperactive; blood pressure 120/84; alopecia; stomatitis; strabismus; ptosis; difficulty in speech; myoclonic twitching; delirium; coma	Before diagnosis of thallium poisoning; eggs; milk; fluids; castor oil; potassium citrate; morphine; dextrose intravenously; sodium thiosulphate After diagnosis of thallium poisoning; intravenous dextrose; saline colonic flushes; intravenous calcium chloride; parathyroid extract; potassium iodide (1 dose); fluids freely	Died 1-26
2	X. N.	♂	34	1/12	1/13	1/14	Nausea; vomiting; pain in epigastrium and extremities; reflexes hyperactive; salivation; stomatitis; ptosis; alopecia; patient was talkative and irrational; optic atrophy; delirium; coma; blood pressure 160/70; blood and urine negative	Before diagnosis: as in case 1 After diagnosis: 62 grains of sodium iodide intravenously, daily; calcium lactate; fluids and dextrose; after 5 days, sodium thiosulphate; calcium gluconate, dilute hydrochloric acid; fruit juices; milk and fluids; phloeripine, 1/12 grain; (1 dose) (sudden exacerbation of thallotoxicosis caused stopping of thiosulphates and administration of iodides for three days); cod liver oil and nutritious foods	Thallium symptoms disappeared by 2-7; died 2-25, from leptomenin-gitis
3	I. N.	♂	10	1/12	1/13	1/14	Pain in extremities and abdomen; nausea; vomiting; alopecia; stomatitis; ptosis; difficulty in deglutition; convulsions; irritable cnecephalitic-like picture; spinal puncture negative; bluish line at gums; myoclonic twitchings; stupor; coma	Before diagnosis: as in case 1 After diagnosis: as in case 7	Died 1-24
4	A. D.	♂	33	1/12	1/13	1/14	Pain in the extremities and abdomen; tingling in extremities; vomiting; hyperesthesias in fingers and toes; foul breath; salivation; alopecia; myoclonic twitchings; dilatation of pupils; conjunctivitis; urine, blood and Wassermann negative; patient irrational; psychosis; involuntary bowel movements; spinal fluid negative; blood pressure 150/110	Before diagnosis as in case 1 After diagnosis: potassium iodide in doses of 5 minims for first day and sodium thiosulphate; on 2d day to 7th, calcium gluconate; dilute hydrochloric acid; sodium bromide; fluids and milk	Discharged 3-8; physical condition good; mental symptoms present
5	C. D.	♀	20	1/12	1/13	1/14	Pain and numbness in extremities; abdominal cramps; dilated pupils; alopecia; coma	Before diagnosis: as in case 1 Transferred to another hospital, Jan. 5; no symptomatic or general treatment given	Died 1-23
6	B. R.	♂	43	1/12	1/13	1/19	Pain in extremities and abdomen; nausea; vomiting; hyperesthesias; stomatitis; alopecia; restlessness; gums purplish; 2.0% eosinophils; blood pressure 145/92	Before diagnosis: as in case 1 After diagnosis: potassium iodide for 1 day and then sodium iodide for 5 days; calcium lactate; intravenous dextrose; milk; fluids; after 5 days sodium thiosulphate; calcium gluconate; dilute hydrochloric acid; fruit juices; cod liver oil	Discharged 2-13
7	L. N.	♀	7	1/12	1/13	1/20	Pain and numbness in extremities; nausea; epigastric pain; alopecia; disturbance of consciousness; choreiform twitchings; convulsions; pulmonary symptoms; blood and urine negative; spinal fluid under slight pressure; fluid clear	Colonic saline flushes; subcutaneous saline solution with 5% dextrose; potassium citrate; codeine for pain; intravenous calcium chloride; potassium iodide, 1 minim; magnesia magma; ether for convulsions	Died 1-23
8	M. N.	♂	6	1/12	1/13	1/21	Pain, tenderness and numbness in extremities; abdominal cramps; stomatitis; salivation; ptosis; vomiting; strabismus; myoclonic twitchings; alopecia; convulsions; coma; blood and urine negative	As for case 7 except that no ether was used	Died 1-23
9	L. N.	♀	5	1/12	1/13	1/21	Pain in extremities and abdomen; vomiting; stomatitis; alopecia; convulsions; pulmonary symptoms; ptosis; pupils dilated; strabismus; involuntary bowel movements	As for case 7 except that no ether was used	Died 1-24
10	I. D.	♂	7	1/12	1/13	1/24	Alopecia; thallium in urine; blood and urine negative; (no thallium in urine on discharge)	Intravenous dextrose; calcium lactate; magnesium chloride; sodium thiosulphate, one dose of potassium iodide; 0.5 cc. parathyroid extract; intravenous sodium iodide 3 days, then sodium thiosulphate; calcium gluconate; dilute hydrochloric acid, ovoferrin; coco emulsion	Discharged 2-12
11	V. D.	♂	9	1/12	1/13	1/24	Pain in extremities and abdomen; alopecia; lethargy; ptosis; strabismus; paresis of extremities; blood and urine negative; photophobia; tuberculin test negative; thallium in urine; urine negative for thallium on discharge	As for case 10, with addition of codeine; phloeripine, grain 1/12	Discharged 2-12
12	F. G.	♀	19	1/12 to 1/22	1/20	1/24	In Tulare hospital, symptoms and observations as in preceding eleven cases, with an addition of unilateral paralysis on left side; urine contained thallium on 7th day; none on 14th day	Sodium thiosulphate for 10 days	Discharged 2/10

* In this column, ♂ denotes male; ♀, female.

PATHOLOGIC OBSERVATIONS

Necropsies were conducted on the patients who died.

Blood.—Gradual erythropenia and leukocytosis with the appearance of normoblasts, a decrease in polymorphonuclear leukocytes and eosinophilia have been reported.¹⁰ Basophilic stippling has been reported¹¹ and denied.¹² In our cases there were no striking changes in the blood picture. The proportion of eosinophils and basophils varied from zero to 2 per cent. There was no increase in the monocytes. Basophilic stippling was not found.

Gastro-Intestinal Tract.—Confirming reports in the literature,¹³ moderately severe gastro-enteritis developed. Postmortem examinations revealed hyperemia and punctate hemorrhages in the mucosa of the stomach and upper intestinal tract, accompanied by swelling and variations in staining of the mucosal cells, most marked in the superficial layers.

Kidneys and Urine.—Glomerulonephritis,¹⁴ degenerative lesions of the kidney,¹⁵ and necrosis¹⁶ have been reported. In our cases there was a slight or moderate increase in albumin and in hyaline and granular casts. Red blood cells were present in only one instance. Thallium was found in the urine as long as three weeks after the tortillas had been consumed. At necropsy, cut sections of the kidneys were dull red and showed impairment of the anatomic markings. Microscopic sections presented marked hyperemia, cloudy swelling and degenerative changes of the cells of the glomeruli and the tubules.

Lungs.—Bronchitis, edema and bronchopneumonia have been reported.¹⁷ In our cases no striking clinical changes were observed before death. At necropsy, cut sections were dark red, and large amounts of frothy, rather viscid, faintly blood-tinged fluid escaped from the cut bronchi following compression. Microscopic examinations showed the alveoli distended with serum, marked hyperemia, and pigments both free and in large mononuclear cells. A few areas presented the microscopic picture of bronchopneumonia.

Liver.—Swelling of the reticulo-endothelial cells¹⁸ and fatty degeneration¹⁹ have been reported. In these

cases there were no clinical indications of liver involvement before death. On necropsy, extensive injury was observed: The livers cut with increased resistance, and the cut sections were grayish yellow or yellow. Microscopically there was a marked fatty infiltration of the liver cells with a tendency to central necrosis.

Endocrine Glands.—Hyperemia, congestion and atrophy of the thyroid,²⁰ marked vacuolization of the suprarenal cortex,²¹ and a decreased epinephrine content of the suprarenal gland¹⁸ have been reported. Microscopic studies of the endocrine glands in these patients gave no evidence of greater damage than other organs, with the exception of the suprarenals, which showed marked hyperemia, small hemorrhages in the medulla, areas of necrosis with indistinct cell outline, and nuclear disintegration.

Nervous System.—The greatest impairment noted in our cases is the deleterious effect on the nervous system. Various changes have been reported (hyperemia of the meninges and brain; also of the subarachnoid spaces, chromatolytic changes, alterations in the glial cells and Golgi apparatus, disintegration of the axis cylinder and medullary sheaths, and partial optic atrophy)²² but no characteristic involvement has been

TABLE 2.—Thallium Content of Viscera of Persons Dying in Fresno Thallotoxicosis Outbreak

Tissue	Thallium Content: Mg. per Kilogram of Fresh Weight				
	Case 1	Case 3	Case 5	Case 7	Case 8
Kidney.....	11.6	5.3	4.4	2.7	5.5
Liver.....	5.5	...	...	3.7	...
Lung.....	7.7	...	...	3.3	...
Heart.....	3.6	...	...	...	...
Spleen.....	2.9	4.6	6.6	...	...
Intestine.....	...	...	...	3.6	...
Bone.....	...	...	...	...	Trace

recognized. Conjunctivitis, retrobulbar neuritis and cataract have been observed in animals and in human beings.²³

The early involvement of the peripheral nervous system is seen clinically in the pain, tenderness, acroparesthesia, objective sensory disturbances and weakness in the extremities, followed shortly in the severe cases by disturbances of the sensorium, convulsions, cranial nerve palsies and myoclonic or choreiform twitches; in less rapidly fatal cases by a psychosis characterized by disorientation, marked restlessness, confusion, and finally in mental deterioration.

Histologic studies of the peripheral and central nervous system of our patients developed a basis for this clinical picture in a peripheral neuritis in the axon of the peripheral nerve, shown by the changes with Bielschowsky stain. Profound and extensive changes were found in the central nervous system. The cortical vessels showed engorgement. Various grades of chromatolysis were seen in the neurons, especially those of the pyramidal tract, the third nucleus, the substantia nigra, and the pyramidal cells of the globus pallidus. The vessels were distended with blood and there were localized areas of edema. In a more chronic case there was striking edema of the pia

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arachnoid. Round cell perivascular infiltration was not a part of the microscopic picture.

In five patients, the last recorded rectal temperatures were 102.8, 106.4, 107, 107.2 and 108.2 F.; in another the temperature by mouth was 104.8 F. It is fairly well accepted that the cells of the tuber cinereum send out impulses having to do with heat regulation. Hemorrhages in the ventricles and pontile hemorrhages cause hyperpyrexia. With the very evident and extensive neuron damage, it seems plausible that the marked hyperpyrexia was due to such an involvement. Other symptoms of thallium intoxication, such as alopecia, salivation, herpetiform lesions on the lips and increased perspiration with a paradoxical reaction to pilocarpine, may be explained by an involvement of the endocrine sympathetic system.

TOXICOLOGY

Samples of the thalgrain responsible for this outbreak were analyzed²⁴ and found to contain 7 and 7.7 mg. of thallium per kilogram, corresponding to 0.9 per cent of thallium sulphate. Samples of the mixed barley and wheat flour from the Tipton home contained 0.75 per cent of thallium, and a trace was found in the bran. Tortillas obtained from the Selma home had dried out previous to analysis but showed 4.55 mg. of thallium per kilogram. It is estimated that each tortilla would contain approximately from 1.25 to 2.0 mg. of thallous sulphate. Since the exact quantities consumed are unknown, it is not possible to determine the total amount of thallium ingested.

Viscera were collected at necropsy, preserved with formaldehyde, and chemically analyzed for thallium, with the results given in table 2. The presence of thallium was demonstrated in every tissue tested. In making toxicologic studies, it would seem desirable to examine the kidney, liver, lung and spleen.

SUMMARY AND CONCLUSIONS

Grain containing 1 per cent of thallium sulphate was illegally procured, ground and incorporated in tortillas. An unknown amount was consumed by at least thirty-one Mexicans. Symptoms developed in twenty within from one to three days; fourteen were hospitalized, and six died of primary thallotoxicosis within sixteen days. The others survived under treatment, one dying about two months later.

The absorption and action of thallium were rapid in these cases, as indicated by the development of alopecia, even under treatment.

These cases presented a well defined clinical picture of abdominal colic, nausea, vomiting and diarrhea or constipation, stomatitis, alopecia, peripheral neuritis, and symptoms referable to cerebral involvements (ptosis, strabismus, convulsions, myoclonic or choreiform movements and optic atrophy).

From our present study, we would recommend that treatment consist of: (1) emetics; (2) fixation by intravenous injections of sodium iodide; (3) gradual elimination by natural means or by the injection of small doses of sodium thiosulphate with careful attention to the urinary thallium excretion; (4) symptomatic treatment as indicated, and (5) rehabilitation by the administration of fluids, calcium salts, dextrose, orange juice, cod liver oil, and various nutritious foods. If pulmonary congestion is not present, pilocarpine may

be administered to stimulate the endocrine system, and salivary and intestinal elimination. In case the administration of sodium thiosulphate causes a sudden exacerbation of thallium intoxication, iodides should be promptly administered and no further attempt should be made to use sodium thiosulphate for this purpose. Further studies are under way with a view to improving this procedure.

Postmortem examinations on seven human beings dying after exposure to thallium showed the following characteristic pathologic picture:

(a) Gross Examination: Alopecia, stomatitis, a yellow appearance of the liver showing cloudy swelling, edema and hyperemia of the lungs, and congestion of the leptomeninges.

(b) Microscopic Examination: Fatty infiltration and central necrosis of the liver, diffuse nephritis, gastroenteritis, degenerative changes and hemorrhages in the medulla of the suprarenals, pulmonary edema and widespread degenerative changes in the nerve cells and axons.

Chemical analyses revealed the presence of detectable amounts of thallium in the kidneys, liver, lungs and spleen.

THE PHYSIOLOGY OF THE COMMON BILE DUCT

A SINGULAR OBSERVATION

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Anatomic evidence¹ indicates that circular muscle fibers surround the duct of Wirsung and the common bile duct individually just before they join the ampulla and may serve as a sphincter for each. However, the fibers are frequently so knit together that it would appear that one could not contract without the other and so occluded both ducts. Burget and Brocklehurst,² observing the guinea-pig, report that there is a definite anatomic and physiologic sphincter at the junction of the common bile duct with the ampulla and that, when the ampulla contracts, the sphincter contracts to prevent regurgitation of the bile from the ampulla into the common duct. There is no physiologic evidence indicating the existence of such a sphincter in the dog and in man. However, we have recently made an observation in man which, according to one interpretation, indicates that such a sphincter may exist.

A series of experiments on human subjects was being performed in which secretin, containing some cholecystokinin, was injected intravenously with a duodenal tube in place to determine the pancreatic response. The injection usually promoted in most subjects a copious flow of pancreatic juice and bile. However, in one subject (A. C. I.), the duodenal tube was passed into the duodenum, and after several minutes a flow of bile-stained fluid (0.8 mg. of bilirubin) occurred. Then a

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24. We wish to acknowledge the assistance of Mr. Justus C. Ward, of the Control Methods Research Laboratory at Denver, in making certain chemical analyses; also of Mr. Paul A. Shaw, of the Hooper Foundation at San Francisco, in permitting the use of his newly developed, unpublished method for the chemical determination of thallium.

clear fluid not stained with bile was obtained. After a suitable control flow had been obtained, secretin-cholecystokinin (300 dog doses of secretin and 10 dog doses of cholecystokinin) was injected intravenously. A copious flow of a clear to slightly opalescent, strongly alkaline, enzyme-rich fluid was obtained, amounting to 162.5 cc. in forty-nine minutes. Ten minutes after the injection, the subject complained of a gradually increasing pain beneath the ribs in the right hypochondrium and just below the right scapula—a typical gallbladder distress but not colic. At the end of forty-nine minutes, it was decided to inject some concentrated magnesium sulphate (50 cc. of 33 per cent) into the duodenum to ascertain its effect on the pain and whether bile flow might be caused to resume. The gallbladder distress disappeared in about two minutes after the magnesium sulphate was injected and bile soon began to flow from the duodenal tube. Shortly after (seven minutes), dark bile-stained fluid drained which contained 92.8 mg. of bilirubin.

Obviously, in this subject, something prevented the flow of bile into the duodenum, so that only pancreatic juice was obtained, and the pressure in the biliary passages was sufficient to induce gallbladder distress. The magnesium sulphate must have relaxed some spastic sphincter in the intramural portion of the bile duct, relieving the pain and permitting bile to flow into the duodenum. It is hardly rational to think that some factor inhibited the liver from forming bile for forty-nine minutes, particularly in view of the occurrence of the gallbladder distress.

To explain adequately the observed facts, only two alternatives appear tenable to us; one is that a sphincter (sphincter proprius ductus choledochi) exists in this subject, as in the guinea-pig, at the junction of the common duct with the ampulla which became spastic for some reason and prevented a flow of bile but not of pancreatic juice. The other is that in this subject the duct of Wirsung opens into the duodenum separately from the common bile duct and that a spasm of the sphincter of the common duct (sphincter ductus choledochi) was present. Another possibility which must be considered is that the entire sphincter of Oddi was spastic and that the pancreatic juice obtained in this subject came solely from the accessory pancreatic duct, which sometimes opens independently into the duodenum. This is not likely because the maximum rate of flow in this subject was 5.2 cc. per minute, and the maximum rate of flow observed by us in other experiments in which the pancreatic juice was diluted with bile was 7.5 per minute; that is, we believe that the rate of flow of pancreatic juice was too great to be accounted for as coming from an accessory duct. (It should be mentioned that, eighteen months ago, a cholecystogram, which was made during another experimental study, showed the gallbladder of the subject to be normal and free of stones. Cholecystograms made by Dr. B. H. Orndoff subsequent to the experiment described in this report yielded normal gallbladder results.)

Irrespective of which explanation is accepted, the significant observations are, first, that under rare circumstances one may obtain practically pure pancreatic juice from the duodenum of a normal man; second, that in a normal human subject, gallbladder pain may be experienced in the presence of spastic obstruction of the intramural portion of the common bile duct provided the gallbladder is concurrently excited to con-

tract, and, third, that the spasm and distress may be relieved by magnesium sulphate administered intraduodenally. The second observation, which strongly indicates that distress and pain may be initiated on a functional basis in an apparently normal biliary tract system, we believe, is not only interesting but also clinically significant. Such an observation may explain the complaint of certain patients seen by the clinician in whom mild attacks of gallbladder pain have been experienced and in whom there is no history or evidence of icterus or stones and removal of the gallbladder reveals it to be normal histologically.

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POLYNEURITIS OF PREGNANCY

A DIETARY DEFICIENCY DISORDER

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It is customary to refer to any and all pathologic conditions developing during pregnancy as manifestations of some occult toxemia, relief from which may be secured by terminating the gravid state. As yet, not one of the "toxins" allegedly responsible for the anemias of pregnancy, for the polyneuritis of pregnancy, for hyperemesis gravidarum, or for eclampsia has been identified, isolated or recovered in any form.

It is not many years since pernicious anemia, pellagra and beriberi were commonly considered disorders due to the action of hypothetic toxins. To this day, in fact, adherents of the toxic theory are still endeavoring to overcome the evidence that these conditions are dietary deficiency diseases either due directly to faulty diet or indirectly arising from some conditioning gastro-intestinal factor.

The anemias of pregnancy have frequently been considered toxic manifestations of the gravid state. Investigations¹ have not only failed to reveal any evidence of toxemia but show that dietary deficiencies, especially of iron, vitamin B₁₂ and related substances, can account for both the hypochromic and the macrocytic (pernicious) anemias of pregnancy. In some cases, a direct lack of these substances in the diet can be held responsible, but in most instances the deficiency can be explained as due to gastric secretory and related defects. Pregnancy normally produces marked reduction in gastric secretion,² and since the fetus is able to drain the maternal organism to supply its needs, the pregnant state is indeed one that readily enhances the development of dietary deficiency disorders. Patients with anemia of pregnancy, if treated on a quantitative basis by supplying the materials that are lacking, recover.

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Our purpose in this communication is to present evidence which favors the view that the polyneuritis of pregnancy is a deficiency disease and may be satisfactorily treated as such. The condition is one of the less common complications of pregnancy and occurs especially in association with persistent vomiting, as first noted by Whitfield,³ a condition which, of course, is very favorable for the development of a dietary deficiency disorder. Berkwitz and Lufkin⁴ noted that three of their four patients with this disease died, and the fourth survived only after a therapeutic abortion and a stormy course. They have reviewed the literature and collected a total of fifty-two undoubted cases of this disease. Severe "pernicious" vomiting was present in forty of forty-one patients in whom note was made as to this condition. This usually began as "physiologic" vomiting during the first two months of pregnancy and gradually became more severe until it assumed the "pernicious" type. The first neurologic symptoms occurred about the third or fourth month. Weakness, numbness and muscle pain, generally most marked in the legs, predominated. In the early stage the patient, already considered neurotic, because of her hyperemesis, was usually held to suffer from hysteria, since the subjective symptoms were more marked than the slight objective paralysis and anesthesia at that time. As the condition progressed, the paralysis of the legs became pronounced, the arms were involved, and the abdominal and thoracic muscles sometimes were affected. Sphincter disturbances were common. Mental changes not infrequently occurred. Death resulted from exhaustion, intercurrent infection or respiratory paralysis. The only constant physical signs other than the neurologic signs were loss of body weight and tachycardia. Laboratory examinations usually were negative, except for anemia, which was frequently present to a moderate degree. Gastric analyses were not recorded.

Berkwitz and Lufkin summarize their paper as follows: "The clinical and pathological picture of the nerve changes in pregnancy is the same as that resulting from alcoholism, infectious conditions, and diet deficiency disturbances such as beriberi and pellagra . . . the exact nature of the toxins producing neuritis is still unknown."

Improvement did not occur in their fifty-two collected cases during pregnancy, and even after removal of the fetus an average mortality of 25 per cent is to be expected. In their view that the polyneuritis of pregnancy is a toxemia which should be treated by immediate evacuation of the uterus; they are supported by most observers.

Against this rather hopeless outlook, we present certain facts and observations, indicating the curability of the condition. First, and of most importance, is the fact that severe vomiting almost always occurs recurrently for many weeks before the onset of polyneuritis. This, of course, prevents the patient from ingesting and absorbing the proper food. Secondly, it has been shown⁵ that abnormalities of the gastro-intestinal tract can play an important rôle in the causation of deficiency

diseases, and in pregnancy there is ordinarily a marked decrease of gastric secretory function.² Thirdly, in pregnancy the fetus takes all sorts of materials from the maternal organism, no matter what depletion may result to the mother. Fourthly, the clinical and pathologic examination in polyneuritis of pregnancy is identical with that of beriberi and alcoholic polyneuritis and is unlike the more strictly motor nerve involvement due to lead, and triorthocresyl phosphate (jamaica ginger) polyneuritis. The concept that certain sorts of polyneuritis often attributed to particular conditions or diseases may be particularly due to lack of vitamin B has been suggested by other investigators, and observations pertaining to this aspect of alcoholic neuritis and other sorts of neuritis have been pursued in this clinic for several years.

With these facts in mind, we present the following case reports:

CASE 1.—A white woman, aged 32, married, admitted Dec. 4, 1928, had been perfectly well until August, 1928. At that time, in the fourth month of her first pregnancy, she began to vomit. This steadily increased in frequency and severity. In September she entered another hospital, where she remained for five weeks, being treated by rectal infusions but continuing to vomit almost everything taken by mouth. Late in October she was admitted to the Boston Lying-In Hospital, where, after all treatment had failed to stop the vomiting, cesarean section was performed and a dead fetus removed. Vomiting ceased at once.

A fortnight after operation, numbness and tingling were noticed in the hands and legs. When she attempted to stand, she found that her legs would not support her. Two weeks later she was transferred to this hospital, her weakness having increased in severity in that time.

The family and past histories were irrelevant. Physical examination was essentially normal except as noted later. The pulse rate was from 80 to 100 per minute. Neurologic examination revealed moderate weakness of the upper extremities and complete paralysis of the legs from the knees down. Coordination was fair in the finger-nose test. Weakness prevented testing the coordination in the legs. The deep reflexes in the arms were diminished, and all tendon reflexes in the legs were absent. Plantar stimulation evoked no response. Skin sensation was markedly diminished over both legs and moderately diminished over the arms. Vibratory sensation was absent in the legs and normal in the arms. Position sense was diminished in both hands and feet, more so in the latter. The calf muscles and nerves were extremely tender to pressure.

Laboratory studies were as follows: red blood cells, 3,140,000 per cubic millimeter; hemoglobin, 55 per cent (Sahli); white blood cells, 6,800 per cubic millimeter. The red blood cells showed moderate variation in size and shape and macrocytosis. Slight achromia was also present. A differential count of the leukocytes showed: polymorphonuclear neutrophils, 74 per cent; eosinophils, 2 per cent; lymphocytes, 6 per cent; monocytes, 17 per cent; metamyelocytes, 1 per cent. The Kahn reaction for syphilis was negative. Nonprotein nitrogen of the blood was 35 mg. per hundred cubic centimeters. Blood sugar (fasting) was 104 mg. per hundred cubic centimeters.

Gastric analysis with an alcohol test meal showed no secretion of free hydrochloric acid.

The urine showed a faint trace of albumin and occasional hyaline casts and leukocytes. Excretion of phenolsulphophthalein was 35 per cent in two hours. A Mosenthal test of urine concentration was normal.

Lumbar puncture revealed a clear, colorless fluid under no increased pressure. The total protein was 42 mg. per hundred cubic centimeters. The Wassermann reaction was negative. The colloidal gold curve was 0000000000. Roentgenograms of the skull showed it to be normal.

The patient was placed on a high protein diet at once. No other treatment was given. Improvement was slow but steady, and on discharge, March 4, 1929, the patient was able to walk alone without difficulty. The erythrocytes were then 4,000,000

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per cubic millimeter, hemoglobin 70 per cent, leukocytes 9,500 per cubic millimeter. Slight achromia of the red blood cells persisted, but they were normal in size and shape.

This patient presented the classic picture of multiple neuritis. The onset occurred after the therapeutic termination of pregnancy in a woman who had vomited for at least three months prior to this. The patient had gastric anacidity and an anemia of the macrocytic and hypochromic type, which can be associated with deficiencies of both vitamin B₁₂ and iron. Improvement was slow but steady on a high protein diet; i. e., one rich in vitamin B and iron. However, the only fact that might serve as a control of this therapy was her unfavorable course of a month prior to its institution, so that no conclusions may safely be drawn.

CASE 2.—A white woman, aged 30, married, entered the hospital, Jan. 10, 1929. One month before, when she was two months pregnant, she commenced to have morning nausea. This grew increasingly more severe until after a week she developed an acute infection of the upper respiratory tract and commenced to vomit more or less constantly. At that time moderate pin-and-needle sensations were present in her arms. The uterus was enlarged to the size of a three months pregnancy. Physical examination was otherwise normal. The family and past histories were irrelevant. Neurologic examination was entirely normal. Laboratory studies showed: red blood cells, 4,790,000 per cubic millimeter; hemoglobin, 95 per cent (Sahli); white blood cells, 7,600 per cubic millimeter. The icteric index was 10. Stained blood films showed no abnormalities. The Kahn reaction for syphilis was negative. The nonprotein nitrogen of the blood was 32 mg. per hundred cubic centimeters. The urine showed a slight trace of albumin and a few leukocytes and granular casts. The excretion of phenolsulphonphthalein was 25 per cent in two hours.

The patient was given nothing by mouth but was fed by rectal infusions. Two weeks after admission, she was discharged, vomiting having completely ceased.

During the next four weeks she remained in bed at home, eating very little. Her memory became poor and she was confused. For two days before readmission she had had a slight bloody vaginal discharge. Physical examination at this time was recorded as normal. The uterus was felt just below the umbilicus. Fetal heart sounds could not be heard. Details of the neurologic examination at this time are not available, but a competent neurologist recorded his opinion that the patient had multiple neuritis and a toxic psychosis.

Laboratory examination showed: red blood cells, 3,510,000 per cubic millimeter; hemoglobin, 70 per cent (Sahli); white blood cells, 13,050 per cubic millimeter. The differential count was: polymorphonuclear neutrophils, 67 per cent; eosinophils, 1 per cent; lymphocytes, 29 per cent; monocytes, 3 per cent. The nonprotein nitrogen of the blood was 37 mg. per hundred cubic centimeters. The urine showed a slight trace of albumin, and hyaline and granular casts. The phenolsulphonphthalein excretion was 40 per cent in two hours. Lumbar puncture revealed a clear, colorless fluid under normal pressure. The total protein was 45 mg. per hundred cubic centimeters. The colloidal gold curve was 1111100000. The Wassermann reaction was negative.

On the sixth day in the hospital (February 23) the patient miscarried a macerated fetus. Under gas-oxygen anesthesia the uterine cavity was subsequently curetted. Shortly thereafter, in spite of the moderate neuritis and psychosis, the patient's family insisted on taking her home.

Two months later, April 27, the patient was readmitted, totally unable to walk, with marked mental confusion and loss of memory. Emotional instability was also present. Physical examination revealed evidence of marked loss of weight. The pulse rate ranged from 100 to 120. Neurologic examination showed some weakness of the arms and paralysis of the legs with atrophy of the muscles and tenderness of the calves on pressure. Tendon reflexes were abolished in the legs and diminished in the arms. Plantar stimulation gave no response. Although paresthesias were present in the hands, no objective

change in skin sensation was made out. Vibratory and position sense were diminished in the legs but normal in the arms. Nystagmoid jerks were observed in both eyes, and a tremor of the tongue was noted.

Laboratory examinations showed: red blood cells, 4,120,000 per cubic millimeter; hemoglobin, 70 per cent (Sahli); white blood cells, 8,550 per cubic millimeter. The differential count was: polymorphonuclear neutrophils, 76 per cent; lymphocytes, 19 per cent; monocytes, 5 per cent. Moderate achromia with variation in size and shape of the erythrocytes with some microcytosis was present. The urine was entirely normal. Blood and spinal fluid Wassermann reactions were negative. The spinal fluid was essentially as previously noted. Gastric analysis showed 20 cc. of tenth normal free hydrochloric acid twenty minutes after the administration of 50 cc. of 7 per cent ethyl alcohol in water. No free acid was present in specimens removed forty and sixty minutes later.

Shortly after this admission, the patient was given a high vitamin diet (including orange juice, 100 Gm. of raw liver and six yeast vitamin [Harris] tablets daily) and 6 Gm. of iron and ammonium citrate daily. Improvement commenced a few weeks after the diet was begun, and she left the hospital, June 17, able to walk, with slight assistance.

This patient presented a clear picture of multiple neuritis with its onset about the fifth month of pregnancy, following several months of vomiting and anorexia. During a period of two months without therapy, following a miscarriage, the patient grew steadily worse. Laboratory examinations showed moderate anemia and gastric hypo-acidity. Improvement commenced shortly after the administration of iron and a diet rich in vitamins. A so-called toxic psychosis of a type associated with this sort of polyneuritis also cleared under this dietary regimen.

CASE 3.—A white woman, aged 40 years, married and pregnant, first developed symptoms of polyneuritis, May 13, 1932. The family history was irrelevant. The past history was of interest, as seven years previously the patient had been seen in a fulminating eclamptic toxemia, which had developed with great suddenness in the last month of her first pregnancy. At this time she had had two convulsions; the blood pressure was 170 systolic and 100 diastolic, and the urine contained large amounts of albumin and occasional casts. Labor was induced and a 4 pound 12 ounce (2,155 Gm.) macerated fetus was delivered. Convalescence was uneventful. A month later the urine was normal, and blood pressure was 115 systolic and 80 diastolic.

In August, 1930, she was seen in the second month of her second pregnancy. Nausea and vomiting were considerable, but the urine and blood pressure were normal. Three months later, the nausea and vomiting had completely ceased but a faint trace of albumin was present in the urine. This was not again observed during the next two months, but on Feb. 4, 1931, the blood pressure had risen to 140 systolic and 80 diastolic, and albuminuria was present, together with edema of both legs. During the next three weeks fetal movements ceased, fetal heart sounds could no longer be heard, the blood pressure remained elevated and albumin persisted in the urine. February 27, the patient was delivered of a 4 pound (1,810 Gm.) macerated fetus. The placenta was small and markedly infarcted. Convalescence was uneventful, the blood pressure and urine becoming normal.

Feb. 5, 1932, the patient presented herself in the second month of a third pregnancy with moderate anorexia. Examination was otherwise normal. During the next two months increasing vomiting occurred, until the patient was able to retain nothing by mouth. She was admitted to another hospital and given dextrose and saline solution by subcutaneous and intravenous injection, together with rectal infusions. Slight albuminuria was present. In a week she went home, able to retain her food fairly well. During April she vomited a few times a week and had slight albuminuria and a slowly rising pulse rate. Early in May vomiting ceased, but numbness and tingling of the hands and feet developed. The pulse rate was

104 per minute. Within two weeks difficulty in walking was experienced; the patient became irritable and forgetful. Albumin was no longer present in the urine. Early in June the pulse rate had risen to 116; the patient was unable to stand, and paresthesias were marked. June 5, the neurologic examination recorded in the accompanying table was typical of a severe polyneuritis. At that time the patient had a macrocytic and hypochromic anemia. Red blood cells numbered 2,870,000 per cubic millimeter; hemoglobin was 51 per cent (Sahli); white blood cells numbered 2,750 per cubic millimeter; and the mean corpuscular volume was 100.3 cubic microns, the mean corpuscular hemoglobin concentration, 27.6 per cent, and the icteric index, 2. The Wassermann and Hinton reactions of the blood were negative. The urine was normal. The blood pressure was 104 systolic and 60 diastolic. Therapy was immediately instituted with 6 Gm. of iron and ammonium citrate, 12 Gm. of autolyzed yeast (vitamins B₁ and B₂), and 12 cc. of cod liver oil daily. No changes were made in the general diet. Within ten days, improvement was noted by the patient. The objective changes in the neurologic status of the patient are given in the table. Five weeks after the institution of therapy, the patient was considerably improved, but, a certain amount of gastro-intestinal distress having developed, the dose of iron was halved. Shortly afterward liver extract No. 343

December 15, the blood was essentially normal. The patient was able to do her own housework. The only residuals of the polyneuritis were a diminution of the knee jerks and absent ankle jerks.

This patient suffered from typical polyneuritis of pregnancy with a macrocytic and hypochromic anemia, the onset following a prolonged period of vomiting. Her unfavorable course was rapid and marked before the initiation of vitamin therapy. The rising pulse rate was not unlike that seen in beriberi. Improvement in the nerve state and blood occurred within ten days of the commencement of treatment and continued throughout the remaining three months of pregnancy. At term, there were only a few abnormal neurologic conditions. The patient was delivered of a healthy baby and was able to walk without difficulty shortly thereafter. Absent ankle jerks and diminished knee jerks were the only residual manifestations at that time.

COMMENT

It seems probable from these observations that the polyneuritis of pregnancy is not a toxemia but a dietary deficiency disorder, similar to the polyneuritis of beriberi, which is known to be due to vitamin B₁ deficiency. It is known that in regions where beriberi is endemic (that is, where deficient diets are partaken by many individuals in the community), the disease frequently occurs in pregnant women.⁶ In regions where beriberi is not endemic, the deficiency may be brought about solely by the restriction in the food intake and absorption induced by hyperemesis, or there may be, in addition, conditioning gastro-intestinal factors, such as occur in the anemias of pregnancy. The fetal demand is an added drain on the maternal organism.

In view of this, rational therapy should avoid operative intervention with pregnancy and be directed to supplying suitable material to meet the deficiency. In cases in which suitable material cannot be retained by the stomach, the use of intramuscular therapy seems indicated.

Since it has been observed that certain cases of macrocytic (pernicious) anemia of pregnancy lack not merely a dietary factor associated with vitamin B₂ but also an unidentified factor like the one absent in Addisonian pernicious anemia and which is present in normal human gastric juice, it is possible that a similar dual mechanism may be at work in certain cases of polyneuritis of pregnancy. For this reason the use of liver and liver extracts, both by mouth and by injection, should be carried out in cases not responding to simple preparations of vitamins B₁ and B₂.

Only when a sufficient number of these cases have been treated along the lines indicated can definite conclusions be drawn. The rarity of the condition precludes systematic study in any one clinic except during a period of many years. Prophylactic use of vitamin B in all patients with "pernicious" vomiting seems indicated.

CONCLUSIONS

1. The polyneuritis of pregnancy is probably a dietary deficiency disorder similar to beriberi.
2. Rational therapy should aim to supply the deficiency, which may be especially some portion of the vitamin B complex; large amounts of concentrates of this substance are advised.
3. In "pernicious" vomiting of pregnancy, prophylactic use of vitamin B is suggested.

6. Hofmann, J. A.: Beriberi in Chinese Women and Its Relation to Childbearing, *China M. J.* 38: 987 (Dec.) 1924.

Neurologic Examinations During and After Pregnancy (Case 3)

	June 5	June 23	July 9	July 29	Sept. 2	Oct. 29	Dec. 15
Motor system:							
Weakness:							
Arms.....	***	**	*	*	N	N	N
Hands.....	**	**	*	*	N	N	N
Legs.....	***	**	*	*	N	N	N
Feet.....	**	**	*	*	N	N	N
Muscle tone:							
Calves.....	***	***	**	*	*	N	N
Muscle tenderness:							
Calves.....	***	**	*	*	*	N	N
Reflexes:							
Both biceps, triceps..	*	*	N	N	N	N	N
Right knee jerk.....	***	***	***	***	***	***	**
Left knee jerk.....	***	***	***	***	***	***	**
Both ankle jerks.....	***	***	***	***	***	***	***
Both plantars.....	*	*	N	N	N	N	N
Incoordination:							
Both legs.....	***	***	**	N	N	N	N
Sensation:							
Pin and brush:							
Both arms.....	N	N	N	N	N	N	N
Right leg.....	**	**	N	N	N	N	N
Left leg.....	**	**	*	*	N	N	N
Position:							
Both arms.....	*	*	*	N	N	N	N
Right foot.....	***	***	**	*	N	N	N
Left foot.....	***	***	**	*	N	N	N
Vibration:							
Both arms.....	*	*	*	N	N	N	N
Right tibia.....	**	*	*	N	N	N	N
Left tibia.....	**	*	*	*	N	N	N

N indicates normal function. The number of stars (*) indicates the extent of the deviation from normal. September 28, the patient was delivered by cesarean section of a healthy full-term infant. Treatment with autolyzed yeast (12 Gm.) and iron and ammonium citrate (6 Gm.) daily was commenced June 6.

(N. N. R.) rich in vitamin B₂, derived from 600 Gm. of liver, and twelve yeast vitamin (Harris) tablets (chiefly vitamin B₁), were prescribed daily in place of the autolyzed yeast.

This change was made with the thought that liver extract might contain, in addition to its vitamin B₂ content, some product such as the material potent in pernicious anemia which might be of benefit. In order to continue a high vitamin B₁ intake, the concentrated tablets derived from yeast were employed.

Improvement continued in both the general health and the neurologic condition of the patient, as recorded in the table. No attempts at massage or exercises were employed. September 28, the patient was delivered of a healthy baby girl by cesarean section. Iron, liver extract and yeast concentrate therapy was omitted for a week, and 12 Gm. of autolyzed yeast daily was administered. A decline in the blood count during the next fortnight made it necessary to recommence the administration of iron also.

As soon as the patient had recovered from the laparotomy, massage and exercise were employed. In addition to subjective improvement, continued regression of abnormal neurologic signs occurred, as recorded in the table.

THE COLOR OF THE NASAL SEPTUM

A CRITICAL STUDY OF ITS SUPPOSED VALUE AS AN
INDEX FOR DIETARY THERAPY IN DISEASES
OF THE UPPER RESPIRATORY TRACT

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In recent years the belief has been voiced by Jarvis and others that respiratory symptoms and pathologic changes in the respiratory system are brought about by faulty acid-base metabolism. Jarvis and his group have expressed the opinion that the color of the mucous membrane of the nasal septum is an index of the acid-base balance in the body: pale septums being present in states of alkalosis, red septums in acidosis. The group of patients with pale septums, according to Jarvis,¹ show a history of having eaten excessive amounts of foods producing alkaline ash and are susceptible to hay fever, asthma, hyperesthetic rhinitis, coryza and bronchial infection, whereas the patients with red septums give a history of having eaten excessive amounts of acid-producing foods and suffer from anorexia, lassitude, emotional instability, irritability, constipation, dry skin, insomnia, fatigue and repeated infections.

The treatment that Jarvis and his group propose for both these types of patients is mainly dietary. The patients with the so-called pale nasal septum complex, that is to say, those supposedly suffering from alkalosis, are placed on diets high in acid-producing foods, such as the proteins. This treatment is supplemented with small doses of dilute nitrohydrochloric acid. Patients with the "red septum symptom complex," that is, those considered to be suffering from acidosis, are given diets containing large amounts of fruits and vegetables (foods producing alkaline ash) and also small doses of sodium bicarbonate. Excellent clinical results have been reported with these dietary treatments by Jarvis and others in pansinusitis, polypoidal nasal disease, hay fever, hyperesthetic rhinitis and asthma, as well as the constitutional symptoms presenting themselves in the "red septum symptom complex."

Unfortunately, in the reports by Jarvis and his co-workers, the diagnosis of acidosis or alkalosis rests entirely on the color of the mucosa of the nasal septum. There is no evidence of either a clinical or a laboratory nature to show whether the patients treated had an abnormal acid-base balance to begin with or whether the acid-base balance was in any way affected by the treatment.

The present work was undertaken to investigate the rationale both of the method of diagnosis by means of the color of the nasal septal membrane and of the suggested dietary treatment. For this purpose, a series of patients and of normal controls were studied to determine (1) whether an abnormally red or pale color of the nasal septal mucous membrane actually indicates a state of acidosis or of alkalosis in the subject, and whether this color changes with diet and progress of disease; (2) whether patients suffering from various diseases of the respiratory tract are benefited by alkalinizing or acid-producing diets, other factors remaining unchanged.

EVALUATION OF THE COLOR OF THE MUCOUS MEMBRANE OF THE NASAL SEPTUM AS AN AID
IN DIAGNOSIS OF DISTURBANCE IN
ACID-BASE EQUILIBRIUM

In an effort to determine the relationship between the color of the septal mucous membrane and the acid-base balance of the body, a study was made of a group of fifty patients with clinical signs and symptoms of acid-base disturbance. Among these were seven in diabetic coma, four in the terminal stages of nephritis, three in postoperative shock, three with renal complications of pregnancy and impending eclampsia, twenty-one with severe toxemias due to purulent processes such as osteomyelitis, mastoiditis, acute sinusitis and empyema of the pleural cavity, eleven with bronchopneumonia of the so-called influenzal type with almost overwhelming toxemias, and one with scarlet fever. Each one of these fifty individuals showed the classic clinical symptoms of acidosis; that is, dehydration and hyperpnea, and acetoneuria. The color of the septal mucous membrane in thirty-four of these patients (68 per cent) was found to be a normal pink, seven (14 per cent) had distinctly pale septal membranes, and in only nine (18 per cent) were the membranes redder than normal. The seven patients in diabetic coma were treated with insulin, and six recovered. Close daily observation of the nasal mucous membranes during convalescence did not reveal gross alterations in color corresponding to the reestablishment of normal metabolic conditions. In this series of fifty cases, therefore, no relationship could be demonstrated between the color of the septal mucous membrane and the clinical symptoms of acidosis.

On the other hand, all three types of nasal septum were found in a group of 100 clinically normal, healthy men and women. Fifty-four were found to have normal color of the nasal mucosa, twenty-eight had membranes paler than normal, and in eighteen the nasal mucosa was scarlet red. It will be noted that the distribution of the three types of nasal septums is about the same in the group of normal controls as in the patients, excepting that there seem to be fewer patients with the normal pink septums, and more with the pale septums in the normal group.

For the sake of this preliminary study, the hydrogen ion concentration of the blood was used as a criterion of any gross abnormality in acid-base equilibrium in twenty cases. It is to be remembered, however, that the constancy of the hydrogen ion concentration of the blood is very well guarded, both by chemical and by physiologic buffer mechanisms, and that cases of compensated acidosis or alkalosis occur in which the anion and cation balance in the blood is shifted, but the hydrogen ion concentration remains within normal limits (p_H from 7.35 to 7.45). In all twenty patients, despite the clinical signs, the hydrogen ion concentration was within normal limits at the time of examination, yet all three types of nasal mucous membrane color were found present.

These results corroborated the conclusions reached by Feinberg,² who determined the p_H on a similar group of individuals.

A more complete study is in progress to determine not only the hydrogen ion concentration but also the alkali tolerance and carbon dioxide combining power in a series of patients in whom the nasal septal color is being followed.

Read before the American Triological Society, Jan. 9, 1933.
From the Department of Otolaryngology and the Department of Chemistry (Nelson Morris Memorial Institute), Michael Reese Hospital.
1. Jarvis, D. C.: Group Letters.

2. Feinberg, S.: Laryngoscope, October, 1932.

An effort to analyze the reasons for the differences in the color of the nasal mucosa in healthy subjects as well as in patients led to the following observations:

1. Atmospheric conditions affect the color of this membrane. Persons exposed to cold, especially in the presence of wind, usually develop red nasal mucous membranes. The same individuals have normal pink membranes under milder weather conditions.

2. Age influences the color of the nasal mucosa of normal individuals. After 60 the membranes tend to become atrophied and are very pale, while the membranes of infants are very red.

Hydrogen Ion Concentration of Blood in Twenty Patients

Patient	Clinical History	Color of Nasal Mucosa	pH of Blood Serum
1	Hyperesthetic rhinitis with usual complaints of sneezing, nasal block and watery discharge; duration two years	Pale, waterlogged	7.44
2	Hyperesthetic rhinitis; usual complaints as above; duration seventeen months	Pale, waterlogged	7.41
3	Hyperesthetic rhinitis; usual complaints as above; duration three years	Pale, waterlogged	7.41
4	Hyperesthetic rhinitis; usual complaints as above; duration eighteen months	Pale, waterlogged	7.46
5	Hyperesthetic rhinitis; usual complaints as above; duration two months	Pale, waterlogged	7.44
6	Hyperesthetic rhinitis; usual complaints as above; duration nine months	Pale, waterlogged	7.45
7	Hyperesthetic rhinitis; usual complaints as above; duration seven months	Pale, waterlogged	7.45
8	Acute sinusitis; duration ten days	Pale	7.38
9	Chronic right otitis media with cholesteoma; duration seven years	Pale	7.38
10	Seasonal hay fever with pollen asthma	Pale, waterlogged	7.41
11	Seasonal hay fever	Pale, waterlogged	7.41
12	Bronchial asthma; duration four years	Pale	7.40
13	Polypoidal sinus disease; duration three years	Scarlet red	7.44
14	Postthyroidectomy; duration two months	Normal	7.37
15	Acute pharyngitis with cervical adenopathy; duration three days	Scarlet red	7.38
16	Chronic right otitis media; red septum symptom complex; duration two years	Scarlet red	7.45
17	Secondary laryngitis; red septum symptom complex; arteriosclerosis and hypertension	Scarlet red	7.48
18	Chronic right otitis media; red septum symptom complex; duration ten years	Scarlet red	7.48
19	Frequent attacks of sinusitis; red septum symptom complex; duration two years	Scarlet red	7.45
20	Subacute ethmoiditis; red septum symptom complex; duration one year	Scarlet red	7.41

3. Blonds with pale fair skin have pale mucous membranes, while brunettes with high color have membranes that tend to be red.

4. Posture, exercise, the use of alcohol, the inhalation of dry air or irritants such as dust influence the color of the nasal mucosa.

5. The nine patients with red nasal mucosa, listed under the head of patients giving clinical symptoms of acidosis, were patients with high temperatures at the time of examination. The resultant surface capillary dilatation caused a flushed face and an engorgement of all the mucous membranes of the head and neck and was therefore sufficient to explain the red color of the nasal mucous membrane.

From these observations, it may be concluded that the color of the nasal mucosa varies not only in persons who are ill but also in healthy individuals and that the reasons for these variations are not necessarily of a pathologic nature.

EVALUATION OF THE DIETARY TREATMENT

Except in prolonged starvation, or in complete carbohydrate deprivation, diet is not known to have any very marked effect on acid-base equilibrium. It is true that some foods, such as the proteins, produce acid ash products; others, mainly vegetables and fruits, produce an alkaline ash. However, excepting in cases of severe metabolic disturbances, such as diabetes,³ nephritis, continued vomiting or diarrhea, the preferential excretion of acid or basic elements by the kidneys, lungs, skin and intestine keeps the hydrogen ion concentration of the blood and tissues in adjustment. The urine may become either acid or alkaline, depending on the diet. Yet the internal acid-base balance is unappreciably affected.⁴ Hasselbach found that changing from a high carbohydrate to a high protein diet caused the carbon dioxide capacity of the blood to drop only 3 volumes per cent, which is within normal variations.

Mineral acids and salts do have an effect on the acid-base balance, but fairly large amounts must be administered. Thus, Peters and Van Slyke⁵ have shown that 0.026 Gm. of sodium bicarbonate per kilogram (1.5 Gm. for an average individual weighing 60 Kg.) is needed to raise the plasma carbon dioxide 1 volume per cent. It takes 45 Gm. of sodium bicarbonate daily to render the urine continuously alkaline.⁶ Therefore, the amount of alkali and acid prescribed in the treatment (e. g., 0.7 Gm. of sodium bicarbonate three times a day) can hardly be expected to exert any influence on the acid-base balance of the patient.

With these theoretical considerations in mind, we studied the actual influence of diet on the course of the disease in question and the color of the septal mucosa in patients suffering with allergic nasal disturbances or asthma. Ten individuals with hyperesthetic rhinitis, five with asthma, six with seasonal hay fever, and three with nasal polyps and an allergic background, were given acid ash diets, with dilute nitrohydrochloric acid as a drug adjunct. This therapy was rigorously pushed over periods varying from three months to one year. No individual in this series responded favorably to the treatment, nor was the color of the nasal mucosa influenced.

Fifteen other individuals were chosen for study who happened to combine scarlet red septums and the symptoms described as being part of the red septum complex. These were given diets producing alkaline ash and, in addition, sodium bicarbonate and Spintrate.⁷ These individuals were under observation for five months. Six of them had chronic suppurative sinus disease, two had chronic tracheobronchitis and seven complained of malaise, insomnia, lack of appetite and emotional instability. The prescribed diet failed to influence the color of the nasal mucosa of the fifteen individuals to any extent. The eight patients with a chronic infection of the upper respiratory tract showed no beneficial effects from the diets. Three with subjective symptoms seemed to be benefited, but definite

3. Bock, A. V.; Field, H., Jr., and Adair, G. S.: *Acid-Base Equilibrium in Diabetic Coma*, J. Metab. Research 4: 27 (July-Aug.) 1923.

Myers, V. C., and Booher, L. E.: *Some Variations in the Acid-Base Balance of the Blood in Disease*, J. Biol. Chem. 59: 699 (April) 1924.

4. Blatherwick, N. R.: *The Specific Role of Foods in Relation to the Composition of the Urine*, Arch. Int. Med. 14: 409 (Sept.) 1914.

5. Peters, J. P., and Van Slyke, D. D.: *Quantitative Clinical Chemistry*, Baltimore, Williams & Wilkins Company.

6. Haldane, J. B. S.: *Experimental and Therapeutic Alterations of Human Tissue Alkalinity*, Lancet 1: 537 (March 15) 1924; *The Production of Acidosis*, J. Biochem. 19: 249, 1925. Haldane, J. B. S.; Hill, R., and Luck, J. M.: *Calcium Chloride Acidosis*, J. Physiol. 57: 301 (June) 1923. Haldane, J. B. S.: *Experiments on the Regulation of the Blood Alkalinity*, ibid. 55: 265 (Aug.) 1931.

7. A dried spinach made by the Spinach Products Company of South Carolina.

conclusions as to the value of the treatment in the alleviation of these symptoms could not be drawn, as one patient felt better immediately after a financial situation in which he was very much concerned had cleared up; one felt better only after a two weeks vacation in the north woods, and one after he had begun systematic daily exercise.

CONCLUSIONS

1. No correlation could be found between the color of the nasal mucosa and the clinical symptoms of acidosis in fifty critically ill patients, all of whom showed clinical symptoms of acidosis with hyperpnea, dehydration and acetoneuria.

2. In 100 normal subjects and in twenty patients with various diseases but with normal hydrogen ion concentration of the blood there were found all three types of septal mucosa—pale, normal pink and scarlet red.

3. The color of the nasal septal mucosa was found to be influenced by age, atmospheric condition, type of complexion and other nonpathologic conditions, as well as by alcoholism and body temperature.

4. The use of diets high in foods producing alkaline or acid metabolic products together with the adjunct acid or alkaline drug treatment failed to influence the symptoms or conditions either in a group of patients suffering from allergic nasal or respiratory disease or in a group with malaise or insomnia. In neither group did the diet affect the color of the mucosa of the nasal septum.

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THE FETISH OF TRIPLY DISTILLED WATER

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In a recent article discussing the means of preventing the occurrence of chills following the transfusion of citrated blood, Lewisohn and Rosenthal¹ in their conclusions said: "The use of solutions prepared with triple distilled water is indispensable." This advice has become traditional in our literature since the time when it was first introduced in an attempt to avoid the reactions that followed the intravenous administration of arsphenamine, apparently on the theory that, if one distillation is good, three distillations must of necessity be three times as good. The question, however, appears not to have been subjected to critical analysis.

In the ordinary practice of redistillation, distilled water is taken from a still of the Stokes, Barnstead or similar design and distilled again in a glass apparatus, usually made of pyrex glass but sometimes made of quartz, in which there is a tight connection, sometimes glass to glass, between the flask and the condenser. The distillate is collected in a glass or quartz container. The apparatus, as generally used, is not provided with any device to prevent carrying over of spray from the flask into the distillate, and there is no arrangement for the escape of volatile impurities. If the original

distilling apparatus is in good condition and is properly operated, it is unlikely that redistillation as just described will remove from the water anything not removed in the first procedure. A higher grade of water can be produced by the use of an apparatus properly fitted with baffle plates to prevent spray being carried over, and so arranged that it is distilled from acid and alkali permanganate. Such an apparatus is preferably made of quartz and has a relatively small output. It is rarely found to have been used in the preparation of water for making solutions for intravenous administration. We have used such an apparatus for thirty years for the production of triply distilled water, which we have employed in certain serologic tests. In purity, the product of this still approaches what is known as "conductivity water."

The question of reactions following intravenous medication did not assume importance until the introduction of arsphenamine. Prior to that time, practically the only fluid that was introduced directly into the circulation was physiologic solution of sodium chloride, and reactions rarely followed its use. Soon after the introduction of arsphenamine, Wechselsmann,² stated that distilled water developed something on standing that seemed to be a factor in the production of febrile reactions and recommended the use of freshly distilled water for making up the solutions. His advice was not generally taken, however, until the work of Seibert³ appeared. She showed that distilled water was likely to become infected on standing and that a gram-negative, thin, motile and non-spore-forming bacillus could be recovered from waters that caused fever when injected intravenously into animals. She pointed out that if the water was sterilized within twenty-four hours after its distillation it was not pyrogenic and did not become so if its sterility was maintained. After her work appeared, much greater emphasis was laid on the need for using freshly distilled water in making solutions that are to be introduced directly into the circulation.

Our experience is entirely in agreement with this idea that the majority of reactions can be avoided by the use of freshly distilled water. At the New York Hospital, the laboratory division took over the manufacture of 50 per cent dextrose solution and the supervision of the production of physiologic solution of sodium chloride, April 1, 1928. Between that date and July 1, 1932, there were issued 10,867 flasks, each containing 100 cc. of 50 per cent dextrose, and it is estimated that at least from 15,000 to 20,000 liters of physiologic solution of sodium chloride was given out. Probably one half of this was administered intravenously. During this period there occurred but one reaction following the intravenous administration of saline solution and in that instance it was found that the solution had been given at too low a temperature. Occasionally, reactions would be reported following the injection of dextrose solution but in no instance could this be attributed to the solution itself, except for one lot in the preparation of which infusorial earth had been used in an experimental modification of the method of preparation. In the other instances, after investigation of the circumstances, it was concluded that the reactions had been due to too rapid

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1. Lewisohn, Richard, and Rosenthal, Nathan: Prevention of Chills Following Transfusion of Citrated Blood, *J. A. M. A.* 100: 466 (Feb. 18) 1933.

2. Wechselsmann: Neuere Erfahrungen über intravenöse Salvarsaninjektionen ohne Reaktionserscheinungen, München, med. Wechschr. 58: 1510, 1911.

3. Seibert, Florence B.: Fever-Producing Substance Found in Some Distilled Waters, *Am. J. Physiol.* 67: 90 (Dec. 1) 1923.

injection or, on two occasions, to a condition of increased reactivity on the part of the patient. It must be borne in mind that these injections were given by the intern staff and that it was exceedingly difficult to control the rate of injection in all cases. These solutions were made with distilled water, distilled once with a Barnstead still and always sterilized on the same day that the water was distilled. The raw water was New York City tap water, which is generally regarded to be of a high degree of purity. It is all chlorinated but does not contain free chlorine at the tap.

The experience of Dr. Bernheim in the laboratory of the New York Hospital lends additional support to our position. She⁴ found that, in the use of 2 per cent sodium citrate solution for intravenous administration, the severity of the reactions that followed were directly proportional to the time elapsing between the distillation of the water and the sterilization of the solution. If this period was less than twenty-four hours, no reaction occurred; if it was between twenty-four and forty-eight hours, a certain proportion of the patients had mild chills, while, if the period was more than forty-eight hours, a large percentage of the patients suffered severe chills.

It is significant that in a fairly large (300 bed) hospital over a period of four years and three months there occurred only a single reaction following the intravenous infusion of physiologic solution of sodium chloride prepared with singly distilled water, the one reaction being due to the injection of a cold solution. It seems impossible that this could occur if water that had undergone but a single distillation contained any appreciable amount of pyrogenic substance. What is much more likely is that reactions that follow the use of other solutions are due to other causes.

A number of factors have been accused of being the real cause for the reactions. The presence of undissolved particles may sometimes be at fault and the pH of the solution may occasionally, though probably rarely, be blamed. During the past few years, however, more and more emphasis has been placed on the importance of the slow introduction of solutions into the veins, especially when these solutions are hypertonic. Levy,⁵ Titus and Dodds,⁶ Palmer, Turner and Gibb,⁷ Randall,⁸ Ravdin,⁹ Huffman,¹⁰ Hendon,¹¹ Hirschfeld, Hyman and Wanger¹² and Hyman and Hirschfeld¹³ have successively called attention to the need of introducing such solutions with great deliberation, and while they do not altogether agree on the absolute speed which is recommended and which appears to differ somewhat with solutions of different substances, the trend seems to be toward advising a speed not to exceed 3 to 5 cc. per minute. This is startlingly substantiated by the more recent report of Hyman and Hirschfeld in which they show that

almost anything can be introduced into the veins of a patient provided it is done slowly enough.¹⁴ They maintain that even an antigen may be injected intravenously into a sensitized animal without the production of anaphylactic shock, provided it is done sufficiently slowly. Under the circumstances, the excellent results reported by Lewisohn and Rosenthal¹ are due much more probably to the slow speed of the injection than to the use of triply distilled water or the attempt to eliminate completely foreign protein from the solutions used.

Naturally, the use of freshly distilled water does not obviate the necessity of observing other precautions in the preparation of solutions and their administration by way of the blood stream. Such solutions should be absolutely sterile; they should, as far as possible, be free from particulate matter (except when citrated blood is used) and the temperature at which they enter the body should be between 37 and 40 C. The optimum rate for the several solutions used appears to differ somewhat, and there is abundant clinical evidence to show that physiologic solution of sodium chloride may be introduced with greater rapidity than other solutions, perhaps as rapidly as 1,000 cc. per hour, provided the condition of the patient's heart will permit. With other solutions the maximum limit of administration should be 300 cc. per hour. The fact that it is possible to give injections at any speed without producing reactions in every case has always been a stumbling block to the intern. When he is remonstrated with for injecting 50 per cent dextrose as rapidly as he can push down the plunger of the syringe he usually responds, "But I have given thirty injections in this way without any difficulty," and his feelings are greatly hurt when the patient has a chill after the thirty-first and he is blamed for giving the solution too rapidly.

SUMMARY

Over a period of four years and three months, no chill has followed the introduction of physiologic solution of sodium chloride into the veins of patients at the New York Hospital. This solution was made with New York City tap water freshly distilled once, in a Barnstead still run by steam and operated during a large part of the period at the full capacity of the apparatus. This experience demonstrates with certainty that singly distilled water can be used with safety in the preparation of solutions for intravenous administration and that "triply distilled water" is truly a "fetish" in that it is a "material object regarded with awe, as having mysterious powers residing in it and from which supernatural aid is to be expected."¹⁵

CONCLUSIONS

1. The use of triply distilled water in the preparation of solutions for intravenous administration is not necessary.
2. The use of freshly (and properly) distilled water in the preparation of solutions for intravenous administration is essential.
3. Solutions introduced directly into the circulation, other than physiologic solution of sodium chloride, should be administered at a rate not to exceed 5 cc. per minute.

525 East Sixty-Eighth Street.

14. Hyman, H. T., and Hirschfeld, Samuel: The Therapeutics of the Intravenous Drip, *J. A. M. A.* 100:305 (Feb. 4) 1933.
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AN IMPROVED CONCENTRATION TEST
OF RENAL FUNCTION

II. A SIMPLE METHOD FOR MEASURING PROTEINURIA

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AND

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In a previous publication¹ we pointed out that the specific gravity of the urine is an accurate measure of renal function if several standardized conditions are in effect. It was also intimated that this classic way of examining the kidneys was no longer popular because disregard of several fundamental features had destroyed the value of the readings. Among these is the failure to recognize the effect of albuminuria on the specific gravity. In the earlier paper it was shown that the specific gravity is increased 0.003 by the presence of 1 per cent of dissolved protein. It is then essential to know the extent of the albuminuria so that its effect may be subtracted from the observed specific gravity. The method employed by us in our earlier work was accurate but too laborious for use by the practitioner. We were, however, unable at that time to offer a practical substitute. The present communication describes a simple and rapid procedure for measuring the albuminuria.

Folin² proposed a method which depends on the turbidity, or cloud, produced by thiosalicylic acid when added to a solution containing protein. By comparing the turbidity of urine produced in this way with that of a solution of known protein content, the exact percentage of protein in the urine can be determined. Folin prepared a solution of sheep's serum containing 0.1 per cent of protein. This was the standard protein solution. The objection to this method, from the point of view of the practitioner, is the difficulty in preparing and preserving the standard solution of sheep serum protein.

TECHNIC

A similar and permanent turbidity has been secured by using only inorganic substances.

Stock Solution.—To about 200 cc. of distilled water in a 500 cc. volumetric flask, 50 cc. of 0.1 normal sodium hydroxide solution and 8 Gm. of copper sulphate (hydrous) are added. The 500 cc. volume is made up with distilled water.

Standard Solution.—After shaking the stock solution vigorously to insure a uniform suspension, exactly 2 cc. of this mixture is transferred by a pipet to a test tube (16 mm. in diameter), 23 cc. of distilled water is added. The turbidity of this mixture is identical with that produced by a 0.1 per cent solution of protein when thiosalicylic acid is used, as described by Folin. Fresh standard tubes may be prepared as desired for use from the stock solution. A permanent standard tube³ may be prepared by drawing out the end of the test tube and sealing it in the flame. In either case the tube must be shaken and inverted several times just before using.

In order to determine the percentage of protein in urine, 1 cc. of filtered urine is placed in a test tube of the same diameter as that of the standard tube. Twenty-four cubic centimeters of thiosalicylic acid (2 per cent) is added. Comparison of this tube with the standard tube should not be made sooner than three minutes, or later than ten minutes, after the thiosalicylic acid has been added. If the turbidity of this mixture is the same as that of the standard tube, the urine

contains 0.1 per cent of protein. If the turbidity is greater than that of the standard tube, the urine must be diluted and the procedure repeated until a "match" is obtained. Correction must then be made for the final dilution. For example, if the urine dilution is 1 to 10 (1 cc. of urine + 9 cc. of water) before 1 cc. of the diluted urine and 24 cc. of thiosalicylic acid matches the standard tube, then the urine contains 1 per cent of protein. In other words, the dilution is multiplied by 0.1 to obtain the percentage of protein present. After a little experience, one can estimate the dilution necessary from the turbidity obtained at the first trial. Usually only one dilution is necessary.

Since 1 per cent of protein raises the specific gravity of the urine 0.003, it is evident that any proteinuria below 0.3 per cent does not need to be considered in correcting the observed specific gravity of the urine in the concentration test. The specific gravity of most urines accordingly will not require correction for albuminuria.

*Clinical Notes, Suggestions and
New Instruments*PERIODIC EDEMA OF HAND WITH SEVEN DAY
CYCLE: TREATMENT WITH SYMPATHETIC
GANGLIONECTOMY

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The phenomenon of angioneurotic edema is not uncommon, but the appearance of a circumscribed edema in the same area of the body with a definite cycle warrants close investigation. Such a condition, occurring independently of the menstrual cycle and without a febrile course, relegates itself to a bizarre group of disease entities over which there is much contention regarding the proper classification.

Quinke¹ in his original description of acute circumscribed edema, mentioned the tendency to recurrence in the same spots at regular intervals. Then Matas² reported a periodic case of daily swelling of the upper lip, beginning at 8 a. m. and completely subsiding by 5 p. m. He also quoted Rieh's case with a fifteen day cycle. Osler³ mentioned the regularity of attacks, occurring in seven, twelve or fourteen day cycles. Then Collins,⁴ in a review of the literature, reported three cases and suggested that this disorder might be the result of an imbalance of the autonomic nervous system. At that time the chief remedies were massive doses of quinine and removal to a different climate. Kermanner,⁵ Thost⁶ and Goldschmidt⁷ reported isolated cases with fairly well marked periodicity, and in 1914 Cohen⁸ reviewed seven cases in which he stressed the imbalance of the autonomic nervous system by referring to this condition as a vasomotor or autonomic ataxia.

Cohen⁸ commented on the difficulty in classifying these phenomena and suggested the term angioneural arthrosis in lieu of intermittent hydrarthrosis, periarthrosis and cyclic angioneurotic edema. A few years later, Bierring⁹ collected a series of cases in which there was intermittent swelling of a joint or extremity, and, more recently, Weismann-Netter¹⁰ reported a case of periodic hydrarthrosis of the knee which was relieved by injections of ergotamine tartrate.

From the Iowa Methodist Hospital.

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Many authorities have considered a cyclic edema to be one of the bizarre manifestations of allergy which may be the result of foreign protein or sunlight, heat, cold or focal infection and trauma.

Lewis and Grant, following their work on vascular reactions of the skin to injury,¹¹ concluded that various skin reactions are due to the release of diffusible substances from the skin following trauma. The skin reaction is similar to that following the introduction of histamine into the skin, and this substance was found in the tissues of the body by Barger and Dale.¹² Duke¹³ stated that allergic reactions might be the result of absorption of histamine-like substances from the intestinal tract. Horton and Brown,¹⁴ in their treatise on cold allergy, concluded that "a physical agent, such as cold, might break down certain molecules in the skin, subcutaneous tissues, or muscles, with the liberation of histamine or histamine-like bodies, which when carried into the general circulation would produce the typical histamine effects."

On the assumption that the injection of increasing doses of histamine would induce refractory periods during which reactions would not occur, the following case was treated with histamine at the Mayo Clinic in 1928, with relief for a period of six months, and was reported by Mueller¹⁵ in 1930:

REPORT OF CASE

A Jewish woman, aged 30, unmarried, was referred to my service by Dr. Joseph Brown of Des Moines with the hope that sympathetic ganglionectomy would be of value. The woman was in perfect health except for a swelling and discoloration of the entire left hand occurring on alternate Wednesdays and lasting one week. The following week, the patient would be entirely free from symptoms. This condition had persisted for eighteen years, and twice during this interval there had been relief of symptoms for a period of two years. There was no relation to the menstrual periods, which were rather irregular. She had been given injections of foreign protein and solution of pituitary without benefit.

In 1928, the patient was given increasing doses of histamine at the Mayo Clinic with relief for a period of six months.

May 27, 1931, she was admitted to the neurosurgical service and presented a swollen, discolored hand in which the skin was very shiny. She complained of pain to a moderate degree and of limitation of joint motion in the fingers of the left hand. On Wednesday morning, the day of the onset of the cyclic edema, the surface temperature of the right hand was 34.5 C. (94 F.) and of the left hand 32 C. (89.6 F.). A procaine hydrochloride injection of the left stellate and second thoracic sympathetic ganglions was performed. Within a few minutes, the temperature was raised to 34.5 C. (94 F.) in the left hand, while the temperature of the right hand remained the same. The swelling, discoloration and limitation of joint motion disappeared, and the patient estimated a 75 per cent relief of pain. An hour after the injection, the temperature of the left hand was 35.5 C. (95.9 F.) and the patient was able to shuffle a deck of cards. In six hours the pain, swelling and discoloration returned, and the surface temperature dropped to 32.5 C. (90.5 F.). The following day, the hand returned to its previous condition.

On August 20, the injection was repeated on Friday, the third day of the cycle of edema, and within an hour the pain, swelling and discoloration disappeared with a rise in surface temperature of 3 degrees C.

A cervicothoracic sympathetic ganglionectomy was performed, September 15, which was the Tuesday preceding the onset of the cycle of swelling. The following morning the hand was normal in appearance and has remained so to the present. There has been a rise in surface temperature of the left hand from 32.5 (90.5 F.) to 36.5 C. (97.7 F.).

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This case is presented to illustrate the benefit of sympathetic ganglionectomy in cases of vasomotor instability. It is obvious that all such cases should be carefully selected before a major surgical procedure is attempted.

Equitable Building.

URTICARIA DUE TO SENNA LEAVES

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Mrs. N. J., aged 41, American, a housewife, consulted me, Aug. 5, 1932, on account of an evanescent, extremely itchy eruption which affected her lower extremities, especially her thighs. It began sometime during the month of May, 1932, and was always worse at night and about the time of waking in the morning. The patient stated that about two hours after retiring she would generally wake up on account of the intensity of the itch, and at that time fairly good sized welts would be present on her legs, and they would persist during the night and at times after she got up in the morning. Later during the day the itching would subside, only to return and repeat the cycle during the night.

General examination revealed nothing of importance, except the remnants of some scratch marks and a few indefinite wheals, sufficient, however, to make the diagnosis of urticaria. Laboratory examinations, including chemical examination of the blood, blood count, serologic studies and urine examination, were entirely negative. Questions regarding her habits of diet, of wearing apparel, of night clothes, of bed clothes, and recent changes regarding them, revealed nothing of importance.

The patient was then skin tested, and a number of positive reactions were found: milk, kidney beans, corn, English walnut, tomato, silk, wool, and house dust. A strict regimen was then instituted, all the foods mentioned and articles of wearing apparel being eliminated, but the urticaria did not disappear. The question of house dust was eliminated, as the patient went away to the seashore for a summer vacation, still adhering to the prescribed regimen, but still there was no relief from the urticaria.

On her return, at the end of September, I was considering the trial of elimination diets, when I again went over her history. The outstanding feature of this was the reassertion of the fact that about two hours after the patient retired she was usually awakened by intense itching, and the reassertion that her hives were worse then than at any other time. These awakening periods apparently had no relation to the time of her retiring, which varied from about 11 p. m. to about 2 a. m. Her habits of the evening were then established: Dinner was usually taken at about 7 o'clock, the time difference of this varying about fifteen to twenty minutes one way or another. That, of course, seemed of some importance at this time, as the patient took no food between her dinner in the evening and the following morning.

Then preparations for going to bed were discussed. These consisted of the usual bathing and toilet procedures. At this time she also mentioned the fact that just before retiring she was in the habit of taking four or five senna leaves, which she chewed and swallowed because she believed that it had a beneficial effect on her bowels.

At first I was going to disregard this, especially when I was told that she had been doing this for about fifteen years, but a recapitulation of her history, with the definiteness with which the cycle of events occurred, led me to the trial of placing the patient on a general diet with the elimination of the senna leaves at night. There was an instantaneous response to this, her urticaria disappearing.

After fourteen days of absolute freedom from the hives, the patient was asked to repeat the chewing of the senna leaves at the time of retiring, and the urticaria returned in the previously described cycle.

There are two points of interest in this report. The first deals with the question of history taking: In urticaria, in eczema, in contact dermatitis, in trade or professional dermatoses, much more can be learned by analyzing an intelligent patient's recital of events than would appear at first sight. Only after a careful consideration of a patient's uninterrupted recital

From the Pittsburgh Skin and Cancer Foundation.

should one start questioning the patient. Too often, as happened in this case, is it assumed that the statement of a patient is not reliable and that the symptoms are imagined. I missed the lead which was given by the patient in the statement that the symptoms occurred about two hours after retiring, because of the assumed reason that the normal relaxation of the body and the warmth of the bed clothes were responsible for the occurrence of the hives at that time, and also because I suspected a nervous element in this case. Later, when the skin tests showed positive reaction to wool, silk and house dust, I assumed that these played the important rôle, discounting the fact that the localization of the symptoms would be pretty much against this hypothesis.

The second point of importance deals with the following: For fifteen years this patient had taken senna leaves without having any appreciable amount of trouble. Then suddenly the gradually increasing urticaria developed. Naturally, the question arises, "Is this an example of an acquired hypersensibilization, and is it comparable to the experiments of Prof. Bruno Bloch?"

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MESENTERIC CYST IN A CHILD

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Our purpose in this paper is to report a case of mesenteric cyst, which, judging from the current literature, is a relatively infrequent condition and, from the textbooks, nonexistent; also to advance a possible explanation for the condition in a case in which the usual pathologic changes did not exist.

J. T., a boy, aged 3 years, seen, Aug. 29, 1932, had always been in good health until three months before he came to us. His family and birth histories were negative. He weighed 8½ pounds (3,855 Gm.) at birth; he walked at 9 months; he was breast fed for three months and then fed whole cow's milk formula. His parents had noticed a left sided hernia since he was 1 month old. He had had none of the contagious diseases of childhood. His parents stated that the hernia had been small and reducible until three months before we saw him, since which time it had grown very large and could not be reduced. The parents noticed that the abdomen had been increasing in size for the past three months. The abdomen had rather rapidly increased in size up to August 29, and for the two or three weeks preceding that date it had caused considerable respiratory embarrassment. He was up and about until two weeks before he came in, but during the last two weeks he had been unable to walk. For two months his bowels had been constipated and laxatives had been required. His appetite had been poor for two or three months.

The child was well nourished and well developed; he had some difficulty in breathing. Examination of the heart, lungs, eyes, ears, nose, throat and extremities showed nothing abnormal. The abdomen was very large, symmetrical and tense; the superficial veins were distended, and the costal margins were flaring. On palpation, there was no tenderness or rigidity and no masses were felt. The liver and spleen were not enlarged. On percussion, dullness extended from midway between the umbilicus and ensiform cartilage to the pubic bone, the entire width of the abdomen, and a fluctuation wave was easily elicited. The left scrotum was very large and tense, and the left testicle could not be felt.

Eight days before coming to us he was examined in a hospital in a neighboring city. The physicians there did a paracentesis of the abdomen and withdrew 2 quarts of bloody fluid, after which the child was comfortable for three or four days, but the fluid rapidly collected again. Examination of the urine was entirely negative. The intradermal tuberculin test with 0.2 mg. of Koch's old tuberculin was negative. A roentgenogram of the chest showed the lung markings normal, a heart of normal size, shape and position, and normal mediastinal shadows. A roentgenogram of the abdomen, flat plate only, showed the entire abdomen as a homogeneous shadow with the exception of a column of gas extending up the right side to the diaphragm and across the midline to the usual position of the splenic flexure of the colon. At operation we found that this was the location of the descending and transverse colons.

The blood Wassermann reaction was negative. A blood count showed: hemoglobin, 70 per cent; red blood cells, 4,830,000; white blood cells, 14,250; total neutrophils, 57 per cent; lymphocytes, 31 per cent; eosinophils, 1.5 per cent; basophils, 0.5 per cent; monocytes, 9.5 per cent.

Conditions to be considered in this case were: First, tuberculous peritonitis, because that is the most frequent cause of ascites in children who have no advanced cardiac or renal disease. The intradermal tuberculin test with 0.2 mg. of old tuberculin was negative, which would make such a diagnosis doubtful. Second, some obstruction to the portal circulation such as may be caused by peritoneal adhesions, enlarged lymphatic glands or a benign or malignant tumor, which might also involve the lymphatic glands. Third, some intra-abdominal or retroperitoneal cyst having its origin from the kidney, spleen or misplaced embryonal tissue. However, we felt that the case was one of ascites.

September 2, we did a paracentesis of the abdomen and withdrew a quart of bloody fluid, which coagulated on standing. Microscopic examination of this fluid showed many red blood cells and nothing else. Since the fluid had collected so rapidly, following the paracentesis eight days before, and was causing so much respiratory distress, we decided that an exploratory operation was imperative.

Operation showed a cystic mass displacing all peritoneal structures, including the descending and sigmoid colons, to the right side of the abdomen. The cyst was punctured and emptied gradually. The fluid was similar to that withdrawn by paracentesis. The posterior wall of the cyst was formed by all retroperitoneal structures to the left of the vertebral column from the diaphragm to the brim of the pelvis; its anterior wall, by the peritoneum and colon. On the posterior wall of the descending colon a handful of necrotic material resembling an organized blood clot was found very loosely adherent to the wall. This was easily removed. The peritoneal opening was closed and a drain placed in the left flank retroperitoneally. It was decided to repair the hernia at the same time, and when this was done a portion of the sigmoid colon was found in the hernial sac. This was reduced. Since the left testicle appeared rudimentary, the entire contents of the left scrotum were removed and the defect in the anterior abdominal wall was closed.

A pathologic report by Dr. B. F. Stout was as follows: The testicle was rudimentary; the portion of the cyst wall removed at operation had no special features and consisted mostly of a relatively thin fibrous tissue. The necrotic mass removed showed small islands of cells which suggested either lymphoid or possibly small cell sarcoma. The tissue took the stain very poorly, owing to necrosis, so that the structure of the cell could not be studied sufficiently to establish its identity. The remainder of it was mostly necrotic blood clot and fibrous tissue. The fluid from the cyst showed the enzyme amylase, but the presence of this could be explained by the presence of blood.

As a possible source of the cyst we have considered traction of the hernia on the retroperitoneal attachments of the descending colon, which might have caused a tearing of this attachment with consequent exudate and the establishment of a circle of empty space filling with tissue exudate, which would cause pressure irritation and thus more exudate. This is a possible explanation and, as no further cause could be found, may have to be accepted as the only one. It is unusual for the descending colon to fill a hernial sac, but it is not difficult, once it is in the sac and filled with feces, for it to cause traction on the upper portion.

The wound in the retroperitoneal space continued to drain the blood-stained fluid and after about ten days a purulent fluid. Three weeks after operation the child was allowed to return to his home in a distant town under the care of the family physician, who reported, ten weeks after the operation, that the wound had entirely healed, the abdomen had maintained its normal contour, and no masses could be palpated. The child was up and about, apparently in the best of health. We feel that the infection in the retroperitoneal space destroyed the secreting surface of the cyst wall and that the repair of the hernia, eliminating the traction on the upper portion of the colon, effected a cure of his condition. Five months later the child was reported still in good health.

Medical Arts Building.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.
PAUL NICHOLAS LEECH, Secretary.

ESTROGENIC SUBSTANCES: THEELIN

The introduction into therapeutics of commercial preparations with active estrogenic properties marked what appeared to be a new phase in the treatment of female sexual disorders. These new preparations, unlike those with which the market had been replete for many years, produced striking and concordant effects when injected into animals. It was anticipated that these products might be of great value in the therapy of menstrual and related disturbances; their clinical use spread widely and rapidly, and observations accumulated in profusion. But the early enthusiasm began to wane as it became evident that the therapeutic usefulness of the estrogenic preparations had been greatly overestimated; the effects of injections in human beings were in the great majority of cases neither striking nor concordant; and in those cases, too few, unfortunately, in which an effort was made to control the observations carefully, the results appeared to be even less notable. Despite their extensive employment, the indications for the clinical use of Theelin and related products are at the present time only imperfectly understood. With a view to establishing, if possible, the indications for and limitations of endocrine therapy of this type, the following review was prepared, and adopted by the Council for publication:

In 1929, Doisy, Veler and Thayer¹ announced the isolation from the urine of pregnant women of a crystalline preparation capable of inducing estrus in the ovariectomized sexually mature rat. The preparation was found both by chemical and by physiologic tests to be indistinguishable from highly potent extracts of the ovarian follicular fluid, except in regard to crystalline form and higher activity. As it appeared likely at that time that the crystalline preparation might have a wide field of clinical usefulness, Dr. Doisy in cooperation with Dean Schwittalla² of St. Louis University endeavored to introduce the product in a manner that would prevent its unscientific exploitation. The Council recognized the right of Doisy to name his crystalline product and voted to recognize the name "Theelin" proposed by him "as the nonproprietary N. N. R. name for the crystalline ovarian hormone made by the process of Doisy." Later, in order to avoid confusion, the Council voted to modify the previous definition and to recognize "Theelin" as the "nonproprietary name for the crystalline (dioxy) ovarian hormone as described under this name by Doisy," and "Theelol"³ as the "nonproprietary designation for the crystalline (trioxy) ovarian hormone as described under this name by Doisy."

Parke, Davis and Company was licensed by the St. Louis University to manufacture Theelin; the firm presented the product for consideration by the Council. Theelin, Parke, Davis & Co., was claimed to be "an aqueous solution of crystalline ovarian follicular hormone adjusted to contain 50 rat units in each cubic centimeter." The preparation was said to be standardized by the three-injection method of Allen and Doisy;⁴ the rat unit was defined as the minimum amount necessary to induce estrus with complete cornification of the vaginal mucosa as judged from a smear, in 75 per cent of a large group of ovariectomized sexually mature rats (150 \pm 20 gram body weight). Three injections were made at intervals

of four hours. The therapeutic indications were stated to be amenorrhea, oligomenorrhea, hypomenorrhea, natural and artificial menopause, and retarded development of secondary sex characters. The indicated dosage was from 50 to 100 rat units a day for varying periods up to several weeks. No satisfactory evidence of clinical usefulness was submitted at that time by the manufacturer. Subsequent evidence submitted was considered not acceptable by the Council.

It is the purpose of the present report briefly to review the literature available to the Council on the female sex "hormones" in general. This survey is of course not exhaustive; but the Council believes that consideration of Theelin alone as a therapeutic agent cannot be satisfactory without an appreciation of the present status of our knowledge on the interaction of the various endocrine factors concerned with sexual physiology in the female.

When Theelin was introduced, it was thought to constitute, if not the only, then the chief,⁵ ovarian factor in the regulation of the sexual cycle. It is perhaps unfortunate that the remarkable effects induced in animals led to its introduction for therapeutic use in the human being without adequate preliminary trial. For the most part this has resulted in a profusion of uncontrolled observations and has led to great confusion; considerable difficulty was encountered in evaluating the results. The possibility that a preparation as active as Theelin is in animals might do considerable harm in its unconsidered clinical use has apparently not received the attention it deserves. Reports have recently appeared in the literature indicating that in experimental animals possibly serious damage may result from the prolonged administration of estrogenic substance; these will be discussed below.

The evidence accumulated so far points to the existence of as many as five, and possibly more, special endocrine factors involved in the female sexual cycle. All these appear to be essential to its normal operation, apparently in varying proportions at different periods of the cycle. It is important to note here that, in the occurrence of these factors and in the incidence or predominance of their effects, species differences play a very significant part; in general this is noted in the text, but space does not permit uniform emphasis throughout.

ANTERIOR PITUITARY GLAND

That the anterior hypophysis is in some way related to the sexual cycle was long suspected; this dates from the observations of Fröhlich⁶ (1901), who first described the syndrome, since known by his name, involving aberration of bodily structure and sexual function associated with morphologic change in the pituitary. In 1909, Erdheim and Stumme⁷ reported marked hypertrophy of the anterior pituitary in pregnancy. Cushing⁸ and his co-workers presented further evidence of the interrelationship of the anterior pituitary and sexual function. H. M. Evans⁹ in 1924, reported that injection of extracts of the anterior hypophysis in rats resulted in disappearance of the estrual cycle so long as the extracts continued to be administered. Associated with this phenomenon, graafian follicles in the ovaries were found to have undergone luteinization. P. E. Smith and Smith and Engle¹⁰ demonstrated the effects of hypophysectomy, of homopituitary and heteropituitary transplants, anterior pituitary feeding and the injection of anterior pituitary extracts. Zondek and Aschheim¹¹ in 1927, demonstrated that, of a large series of different tissues tested, the pituitary alone appeared to be involved in these effects on the sexual organs, described below. Continuation of these studies by both groups of investigators demonstrated the dependence of normal ovarian function on the activity of the

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pituitary. Zondek proposed that the hypophysis be considered the "motor" of the ovary. While the posterior hypophysis may be involved in parturition, it is apparently not concerned with the anterior lobe effects. With the additional information furnished more recently by others, the following briefly may be considered the present status of the investigative work on the anterior pituitary factors:

The number of separate hormones produced by the anterior hypophysis cannot at present be ascertained; but the existence of several appears to be fairly well established, and a number of others have been claimed: (1) a growth factor, which is concerned with bodily growth and antagonistic in a certain degree to the sex factor(s), inhibiting the activity of the latter during the period of active growth; (2) a follicle stimulating factor, which induces growth and maturation of ovarian follicles with production of the estrus-inducing factor; (3) a luteinizing factor, which is capable of inducing extensive luteinization of ovarian follicles (when in excess, even before ovulation); (4) a factor which (in conjunction with the estrus-inducing factor) can induce uterine bleeding in monkeys (recent work casts some doubt on the existence of this principle);¹² (5) a factor which can induce mammary proliferation and lactation in rabbits.¹³

Not all investigators are agreed as to the duality of 2 and 3. Some of the more recently accumulated evidence seems to indicate the existence of two separate factors,¹⁴ but species differences appear to play a large part in the relative predominance of the two effects.¹⁵ It is too early at this time to attempt an evaluation of these claims and of others for still other "hormones"; of these, the existence of the growth factor and the fraction(s) having to do with follicular growth and luteinization may be considered as established. Aschheim and Zondek¹⁶ have made extracts of the urine of pregnant women, these extracts having the combined physiologic properties of the follicle-stimulating and luteinizing factors. These they term "Prolan"; they have also prepared fractions said to have the separate properties individually and call these "Prolan A" (follicle stimulating) and "Prolan B" (luteinizing). The latter they considered identical with similar preparations made from the anterior hypophysis but this appears to be dubious,¹⁷ particularly in view of the observation of Reichert and Evans and their co-workers¹⁸ that substitution therapy with urinary prolant failed after hypophysectomy. Wiesner¹⁹ has prepared extracts having similar effects which he calls Rho I and Rho II, respectively. Collip²⁰ has isolated from the placenta two fractions, one of which, "Emmenin," has physiologic actions similar in part to those of Prolan A, and the other of which is similar in this respect to Prolan B. Where these substances are elaborated cannot at present be decided.

Aschheim and Zondek²¹ have utilized the presence of the Prolan fraction in the urine as a test for pregnancy as determined by the effect on the ovaries of immature mice. Other pregnancy tests²² have been suggested. These methods have also been used in testing for the presence of the Prolan fraction

in the blood and in the urine in the normal state and in various pathologic conditions and in estimating the amounts of estrus-inducing factor in these fluids.²³ Some of the results of these investigations are presented below.

In summary, the following actions have been ascribed to secretions of the anterior hypophysis: (1) Induction of ovulation;²⁴ (2) Stimulation of ovary to secretion of estrogenic substance; (3) Production of luteinization in follicles either with or without ovulation (luteinization may also be induced by direct intrafollicular injection of urine of pregnancy),²⁵ leading to secretion of "Progesterin";²⁶ the anterior hypophysis is essential to the maintenance of the corpus during pregnancy;²⁷ (4) Induction of uterine bleeding with combined action of estrogenic substance (even without the presence of the endometrial hyperplasia characteristic of menstruation); (5) Production of mammary proliferation and lactation without the intermediation of ovarian factors;²⁸ (6) Production of marked hypertrophy of seminal vesicles and prostate.²⁹

It is by this time well authenticated that (regardless of how many factors are involved) in the absence of a functional anterior pituitary, normal cyclic ovarian function ceases.³⁰

Considerable evidence has accumulated that the hypophysis is involved in the control of metabolism. While these data appear to be far-reaching in their implications, it is too early to speculate as to their ultimate significance. This phase of the problem lies beyond the scope of this report and the extensive bibliography will not be presented or discussed here. Of interest in this connection, by way of illustration, is the recent work indicating a relationship with thyroid activity and an association with dextrose and fat metabolism. Houssay and Biasotti (Endocrinology 15: 511 [Nov.-Dec.] 1931), for instance, have reported that hypophysectomy prevents or diminishes the glycosuria produced by pancreatectomy; implantation of anterior pituitary in such animals may then result in a rise in blood sugar. Animals which have been both pancreatectomized and hypophysectomized have lived for months with blood sugar either normal or only moderately elevated. Anselmino and Hoffmann (Klin. Wehnschr. 10: 2380, 2383 [Dec. 26] 1931) have prepared extracts of the anterior lobe of the hypophysis which on injection cause a rise in the level of acetone bodies in the blood. The latter findings may be of especial significance with respect to the known relationship of dextrose utilization with fat metabolism.

OVARY

Preparations capable of inducing changes in the tubular tract were made from the ovary as early as 1906 by Marshall and Joly; later, Adler, Iscovesco, Fellner, Okinschitz, Seitz, Wintz and Fingerhut, Herrmann and Fraenkel, Frank³¹ and others made potent preparations of whole ovary, placenta, corpus luteum or follicular fluid. Since the culmination of this work by the isolation of a crystalline estrogenic substance by Doisy, Veler and Thayer¹ (and independently by Butenandt)³² from the urine of pregnant women, it is established that estrogenic agents can be obtained from the following sources (it is understood that the alleged identity of these agents rests only on similarity of physiologic action and in some instances on similar chemical characteristics but in no case, to the Council's knowledge, has actual chemical identity been established): (1) follicular fluid;³³ (2) corpus luteum;³⁴ (3) ovarian stroma (?); (4) blood of nonpregnant women at certain stages in the menstrual cycle; (5) urine of nonpregnant women; (6) blood of pregnant women; (7) urine of pregnant women (the mater-

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34. Frank, R. T.: *J. A. M. A.* 81: 1134 (Sept. 29) 1923.

nal ovaries are apparently not necessary to the production of estrogenic substance during pregnancy);³⁵ (8) placenta, fetal membranes and amniotic fluid; (9) male blood;³⁶ (10) male urine;³⁷ (11) certain plants;³⁸ (12) other materials of organic origin such as petroleum and lignite.³⁹ Recently, Cook, Dodds and Hewett have reported that a synthetic compound (1-keto-1:2:3:4-tetrahydrophenanthrene) has estrogenic properties; three other cyclic compounds, of which two were hydrocarbons, were found also to have this activity in addition to being definitely carcinogenic.⁴⁰

From the observations of Frank and of others, it is apparent that the occurrence of estrogenic factor in the blood and in the urine follows certain definite curves in the normal woman; these differ during pregnancy from those found in the normal non-pregnant woman and the two former from the curves found in patients suffering from certain menstrual disorders. Certain relationships⁴¹ have been established between the occurrence of the estrogenic and the anterior pituitary fraction (Prolan) in the blood and urine. The variations occurring in disease have to some extent also been elucidated. These studies are of the utmost importance as a basis for attempted substitution therapy, which latter, by neglect of these factors, has so far been decidedly inadequate.

These observations have served greatly to emphasize the cyclic variations that occur in the proportions of the various "hormones" in the body fluids and tissues at various times. It is evident that substitution therapy, which attempts to reproduce the natural concentration curves in the body fluids, will at no two successive times involve identical doses of a given preparation (excluding for the moment all consideration of absorption, distribution, fixation, inactivation and excretion, factors only imperfectly understood at this time). This concerns, of course, not only Theelin but all preparations purporting to contain any of the female sex "hormones." So far as the present evidence goes, such attempts at therapy as have been used in the past must usually have resulted, merely by the operation of the theory of probability, in further disruption, rather than otherwise, of an already pathologic state.

The following is a summary of the claimed actions of estrogenic substance:

1. Produces the phenomenon of estrus, consisting in hyperplasia of the vaginal wall, enlargement and hyperemia of the uterine musculature, endometrial hyperplasia, etc., on injection (or ingestion of much larger quantities) into sexually mature animals, normal or castrate.
2. Causes premature opening of the vagina and general hypertrophy of the tubular tract, with ensuing estrus, when administered to immature rats and mice (similar effects are general in other species).^{40c}
3. Induces uterine bleeding, simulating menstruation, in immature and mature rhesus monkeys, in the presence of an active anterior hypophysis or on the injection of active extracts thereof.⁴¹
4. Produces moderate mammary hypertrophy on repeated injection, but usually does not lead to lactation. (Kunde et al. report one case of lactation in a bitch following injection of estrogenic substance).⁴²
5. If long continued at high dosage may inhibit ovulation.
6. Prevents normal growth of the anterior hypophysis and of the ovaries and results in fibrotic alterations of the ovaries, thyroid hyperplasia and other changes on prolonged administration to immature animals (in young rats bodily growth rate is diminished, testes or ovaries are markedly smaller than nor-

mal,⁴³ but daily administration of Theelin or Theelol to adult rats for twenty-five days does not sterilize them).⁴⁴

7. Can prevent conception in guinea-pigs⁴⁵ and in rats, and in large doses may interrupt early (but not late) pregnancy in these animals.⁴⁶ (This apparently does not hold for all species.)

8. Enhances the rhythmic contractility of the uterus.⁴⁷

9. Sensitizes the uterus to the action of the posterior pituitary oxytocic hormone.⁴⁸ (Jeffcoate⁴⁵ claims that Theelin, Parke, Davis & Co., does not have this effect on the isolated organ.) (The posterior hypophysis is not necessary to parturition in the cat or in the rat).⁴⁹

10. Produces changes in the endometrium in small doses, necessary to the subsequent action of corpus luteum, but in large doses inhibits the action of corpus luteum in causing progesterational proliferation of the endometrium.⁵⁰

11. Increases the oxygen consumption of the immature mouse uterus but not of the mature organ.⁵¹

12. Diminishes the coagulation time in hemophilia.⁵²

13. May neutralize tetanus toxin in vitro (?).⁵³

14. Long continued administration to mice, of a strain in which normally the females only develop spontaneous mammary adenocarcinomas, appears to predispose to development of such malignant tumors in the males.^{53a}

CORPUS LUTEUM

As stated before, an estrogenic fraction has been obtained from this source. More recently, Allen and Corner⁵⁴ have prepared from the corpus luteum highly potent but unstable extracts, devoid of estrogenic activity, and having very interesting physiologic properties. They call this preparation "Progestin." Independently, Hisaw and his co-workers⁵⁵ have also prepared a potent product of a similar nature ("Corporin").⁵⁶

The following effects have been ascribed to "Progestin":⁵⁷

1. That it enhances the endometrial hyperplasia prepared by the estrogenic substance and sensitizes the uterine mucosa to nidation by the ovum.^{58a}
2. That it induces mucous transformation of the superficial layers of the vaginal mucosa characteristic of pregnancy (this effect has also been ascribed to estrogenic substance).^{58b,c}
3. That it inhibits the normal rhythmic contractility of the uterus.⁴⁷
4. That it inhibits the effect of estrogenic substance, of posterior pituitary extract, and of combinations of the two on uterine contractility.
5. That it inhibits the "Prolan A" effect on the ovary, preventing ovulation.
6. That it can prolong gestation beyond the normal for a given species.

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7. Smith and Smith claim that it increases the urinary output of estrogenic substance but Frank was unable to confirm this.

8. That it inhibits uterine bleeding in rhesus monkeys and apparently also in man.⁵⁹

9. That it antagonizes the estrus-inducing effect of Theelin, etc. (This has also been noted on feeding whole corpus luteum.)⁶⁰

Evidence that more than one factor may be involved in the foregoing effects also exists, but this is inconclusive. Hisaw⁵⁶ has prepared a fraction ("Relaxin") which, during estrus or in conjunction with estrogenic substance, causes resorption of the symphysis pubis in the pocket gopher and relaxation of the pelvic ligaments in the guinea-pig. Neither the principle nor the effect has been demonstrated in man. (The effect has been said to be due to estrogenic substance alone.)

Anterior pituitary extracts can produce any of the effects described by follicular stimulation or by luteinization of the ovary, resulting in secretion of the estrogenic and corpus luteum factors.

ABSORPTION, DISTRIBUTION AND EXCRETION OF ESTROGENIC SUBSTANCE

This phase of the problem, despite its great importance and the wide clinical use of Theelin and similar preparations, is imperfectly understood. Comparatively little attention has been paid to the subject, and the data at hand are conflicting and confusing.

Ziserman⁶² have noted that, after injection of a single large dose into a patient, large amounts could be recovered from the urine shortly thereafter, but that when the same dose was distributed in fractions over twenty-four hours, only traces could be detected in the urine.

Fee, Marrian and Parkes⁶³ investigated this problem in the heart-lung-kidney preparation. They added 100 or 200 mouse units to the circulating blood and assayed the blood and urine. Only about 1 per cent of the injected dose was found in the urine; the substance disappeared from circulating blood rapidly. Incubation of standing blood at 37 or at 20 C. did not inactivate added estrogenic substance in three hours, although it was completely inactivated in a much shorter time in the circulating blood. Only traces were found in the heart and lung tissues. These workers suggest the possibility of oxidative destruction in the lungs. In view of the stability of Theelin to oxidation, it seems probable that the explanation of these results lies elsewhere; the possibility of inactivation or destruction by or in the tissues has not been sufficiently considered.

In human pregnancy, Frank found 50 mouse units of estrogenic substance per liter of venous blood as compared to 25 mouse units per liter in nonpregnant women; at the same time, the urine of pregnant women contained 10,000 mouse units per liter, whereas the urine of nonpregnant women contained only from 30 to 100 mouse units per liter. In view of the finding of tremendous quantities of anterior pituitary hormone in the blood of pregnant women (3,000 mouse units per liter), as well as

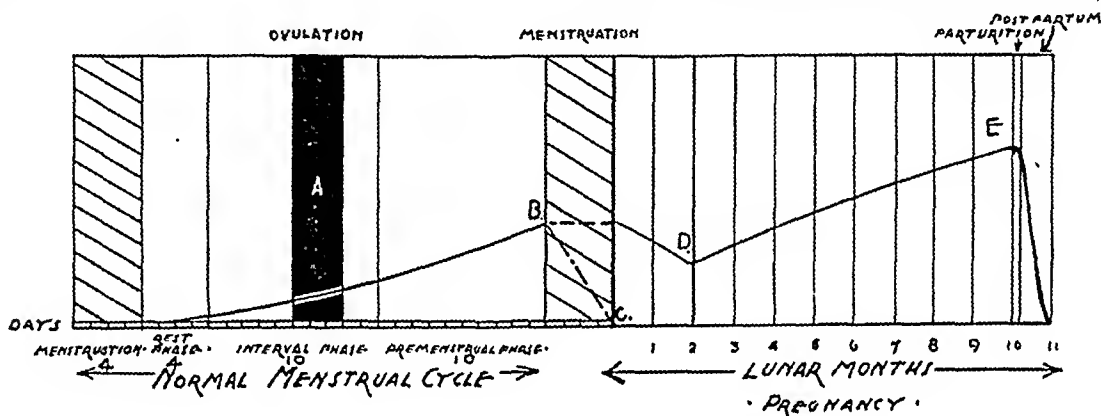


Fig. 1.—Variations in the blood content of estrogenic substance in the normal menstrual cycle and in pregnancy. A, estrogenic activity occasionally demonstrable at this time in 40 cc. of blood. B, estrogenic factor demonstrable in 94 per cent of normal women at this period in 40 cc. of blood. C, extent of estrogenic substance falls during menstruation. D, content of estrogenic principle drops in first two months of pregnancy owing to excessive excretion. E, estrogenic substance demonstrable by injections of whole blood into animals (reproduced through the courtesy of C. Mazer and L. Goldstein^{23b}).

Frank has found in normal women that 1 mouse unit of estrogenic substance can be obtained from 40 cc. of blood, between seven days before menstruation and the onset of menstruation. No test can be obtained from this quantity of blood at other times. A total of from 800 to 1,500 mouse units may be obtained from the urine throughout the cycle, with maxima at the presumable time of ovulation (about twelve to fourteen days from the onset of the preceding flow), and from one to two days before the onset of the succeeding menstruation. The injection of 5,000 mouse units subcutaneously had no demonstrable effect on the amount recoverable from the urine of a normal woman. After the intravenous injection of 2,000 mouse units into rabbits, only 1 mouse unit in each 4 cc. of serum could be found after one hour and none at all thereafter. After subcutaneous injection of 2,000 mouse units,⁶¹ 1 mouse unit was found in 5 cc. serum at the first hour and none thereafter. After 3,000 mouse units by vein to a rabbit, 1 mouse unit was found in 40 cc. blood after twenty-four hours; extracts of all the organs were inactive except for a total of 2 mouse units in the liver.

Allen found that after subcutaneous injection of 1,500 mouse units into each of two monkeys, one fifth of the injected dose could be recovered from the urine in two days. Mazer and

more estrogenic factor, it appears probable that increased production accounts for the larger quantities present. The placenta may be viewed with suspicion in this regard. Recent evidence indicates that the ovaries are not necessary to the production of estrogenic substance during pregnancy,⁶⁵ but the follicles are apparently the chief source in the nonpregnant animal.⁶⁴ G. Van S. and O. W. Smith, as already noted, found that "Progestin" increases the urinary excretion of injected estrogenic substance in rabbits; but the rôle of the corpus luteum in this respect has not been fully elucidated.

MENSTRUATION

Since it is for disorders of menstruation more than for any other condition that the preparations that have been discussed are chiefly used clinically, it is thought that a brief review of the more recent concepts in this field will be germane to the discussion which follows.

The difficulties involved in studying menstruation lie largely in the fact that the phenomenon is restricted to primates and can be studied, man excluded, only in monkeys and apes. Although forms of uterine bleeding, involved apparently in furnishing nutrition to the ovum, are of quite general occurrence and have an ancient phylogeny, as Hartman⁶⁵ has pointed out,

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64. Marshall, F. H. A., and Wood, W. A.: *J. Physiol.* 58: 74 (Oct.) 1923.

65. Hartman, C. G.: *J. A. M. A.* 97: 1863 (Dec. 19) 1931.

the relationship of the latter phenomenon to the process occurring in the human being has not yet been adequately elucidated.

Recently, Corner, Allen and Hartman and their respective co-workers have studied menstruation in the rhesus monkey. Corner⁶⁶ has pointed out that menstruation in the monkey frequently occurs without ovulation and is therefore dependent neither on the corpus luteum nor on the premenstrual changes in the endometrium, which are in part at least induced by the corpus luteum. Ovulation in the monkey when it does occur takes place twelve or fourteen days before the onset of the succeeding menstruation. Edgar Allen⁴² reported uterine bleeding in castrated monkeys following cessation of injections of estrogenic substance. Hartman, Firor and Geiling¹² reported that the uterine bleeding induced in both normal and castrated monkeys by the injection of estrogenic substance was completely abolished by hypophysectomy. The injection of anterior lobe extracts which had neither the follicle-stimulating nor the luteinizing effect, or the implantation of anterior hypophysis restored the action of estrogenic substance. The threshold for bleeding is far below the dose necessary to produce the changes characteristic of estrus. These authors point out that bleeding may result from a uterus that shows no visible microscopic change in the mucosa. Hence the endometrial proliferation normally characteristic of the premenstrual period is not necessary to bleeding. If this is true also in the human being, it must be decided what benefit for the patient is to be attained from the induction by therapeutics of bleeding alone. Hartman and his co-workers believe that a special principle of the anterior pituitary is involved in conjunction with the action of the estrogenic principle in producing the bleeding, but Saiki's results cast some doubt on this hypothesis.

It is well known that the surgical removal of the corpus luteum in the human being results in the onset of menstruation from twelve to thirty-six hours thereafter. In extension of this observation, Corner has found that "Progestin" inhibits menstruation.

These observations cast doubt on the long accepted thesis that bleeding is of fundamental importance in the human sexual cycle and emphasize the desirability of greater caution in the treatment of disorders of menstruation. Some sign or signs in addition to bleeding may well be necessary as an indication of the existence of the normal state. These observations indicate the necessity for even greater caution than has been used in the past in evaluating the results of endocrine therapy in menstrual disorders.

Frank, Fluhmann, Mazer, Kurzrok and others have studied the cyclic occurrence of estrogenic substance and of "Prolan" in the blood and urine of normal nonpregnant and pregnant women, and of those suffering from certain menstrual disorders. A discussion of these factors is given under the clinical use of these preparations.

ASSAY OF ESTROGENIC PREPARATIONS

Allen and Doisy,⁶⁷ in their work on the isolation and purification of the estrogenic principle from liquor folliculi, utilized as a method of assay the phenomenon recorded by Stockard and Papanicolaou; namely, cornification of the vaginal mucosa during estrus. The effect occurs in the rat and mouse concomitant with certain stages of the estral cycle (which in these animals has a normal periodicity of from four to six days) but is abolished by ovariectomy. The injection of extracts of liquor folliculi into castrated mature rats was found to induce these changes, which could be detected by microscopic observation of the vaginal smear; when positive, there was replacement of the leukocytes normally present, first by nucleated and later by non-nucleated epithelial cells. The method was later standardized by Doisy and his co-workers and has since been used in the assay of Theelin. It was found that multiple injections of a given minimal quantity of the aqueous preparations of Theelin would produce estrual changes, whereas a single injection of the total amount failed in this respect. The Allen-Doisy method therefore utilized the multiple injection technic. In the more recent Doisy modification of this test, which followed the work of Coward and Burn discussed later,

the induction of the vaginal estrous effect in 75 per cent of a large number of rats of standard weight is the criterion of activity.

Modifications made by other workers consist in the use of other animals, notably mice, occasionally rabbits; immature uncastrated animals (utilizing opening of vagina as the criterion of activity); different spacing of multiple injections; single rather than multiple injection; different sites of injection; the use of oily rather than aqueous preparations; different time periods elapsing between injection and reading of smear; these and other variations in practically all the possible combinations. The preparations used by different investigators were, of course, of varying degrees of purity and were varyingly contaminated by other possibly active principles.

It is not surprising, in view of these differences, that in only a few isolated instances have workers in separate laboratories been able to agree on the potency of a given preparation and on the relationship between the two most commonly used units: the "rat unit" and the "mouse unit." Where attempts have been made to use identical technics, agreement of results has been better but ordinarily not striking; in one case brought to the attention of the Council, however (E. A. Doisy and Parke, Davis & Company), assays by the Doisy method are said to be checked repeatedly in two different laboratories within a range of ± 20 per cent.

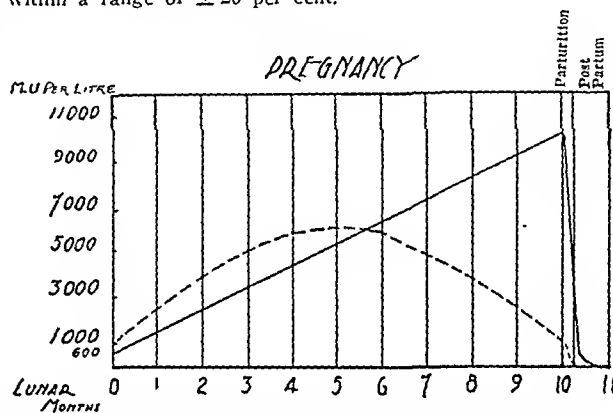


Fig. 2. The excretion of estrogenic substance (solid line) and anterior pituitary-like factors (broken line) in the urine during pregnancy (reproduced through the courtesy of C. Mazer and L. Goldstein).

These factors serve only to emphasize the necessity for more information on absorption, distribution and excretion of Theelin and related products. The problem is made more difficult by the fact that any investigation of these factors must have as its basis an assay method. Consequently, it is unlikely that the early work on this subject will be of more than relative significance. However, in general, by rigid adherence to a given technic, individual investigators have succeeded in obtaining fairly accurately reproducible assay figures for a given product. In fact, Frank has stated that, by meticulous attention to technical detail, accurate results can be obtained with single animals. For this reason, despite the vicious circle involved, significant data should be forthcoming. It is to be hoped that a highly sensitive chemical method may in the future replace the present biologic method.

In the absence of such data, any discussion of the relative value of the assay methods must be based largely on theoretical considerations; definite conclusions are at this time not possible.

The work of Coward and Burn and of Burn and Elphick⁶⁸ primarily deserves consideration. These workers found that the variation in the response of animals to injections of estrogenic substance may be as much as 1,000 per cent; in other words, it may take ten times the dose to produce estrus in one animal of a given weight as in another. The basis of this tremendous variability is not understood but it is reminiscent of the unpredictable responses obtained in the early smooth muscle work in which uterine tissue was used. Because of this variability, Coward and Burn decided to use the method established by

66. Corner, G. W.: J. A. M. A. 89: 1839 (Nov. 26) 1927.

67. Allen, Edgar; Doisy, E. A., and others: Am. J. Anat. 34: 133, 1924.

68. (a) Coward, K. H., and Burn, J. H.: J. Physiol. 63: 270 (Aug. 8) 1927. (b) Burn, J. H.: Physiol. Rev. 10: 146 (Jan.) 1930. (c) Burn, J. H., and Elphick, G. K.: Quart. J. Pharmacol. 5: 192 (April-June) 1932.

Treva⁶⁹ for biologic assay in general; the percentage of animals in estrus with a given dose was plotted against the dose and a curve constructed. The unit was chosen as that dose which would produce estrus in exactly 50 per cent of animals injected. Once the curve was constructed, future assays were relatively simple. To quote an example of Burn: Twenty rats were each injected with a 10 mg. dose; estrus occurred in nine, or 45 per cent. Reference to the curve already constructed shows that estrus occurs in 45 per cent of animals with 0.94 unit; therefore, 10.6 mg. of this preparation equals 1 unit.

This method appears to have possibilities which merit for its serious consideration, particularly, since by its use D'Amour and Gustavson⁷⁰ and Becker and his co-workers⁷¹ have been able to confirm Coward and Burn's results with an agreement surprising in this type of work. One firm (Squibb) has adapted the Coward-Burn curve to a modification of the Allen-Doisy three-injection technic with apparently satisfactory results in the standardization of Amniotin.

With regard to the other factors involved, the following appear to be fairly well established: 1. In rats or mice Theelin or Theelol is much less active in oily solution than in aqueous solution;^{68c} in birds, as judged from the feather test, the reverse is true. 2. Multiple injections at intervals increase the activity of a given dose of the aqueous solution⁷² but do not materially affect the activity of the same dose in oily solution.^{68a} 3. The rat unit and the mouse unit are approximately identical when assayed in oily solution but marked disagreement occurs among the various workers as to the relative values when the aqueous solution is used. The relative weights of the animals appear to be factors when the aqueous solution is injected, but this relationship is by no means constant. The ratios in the literature for the rat unit: mouse unit of the aqueous preparations range generally from 10:1 to 2:1, the most commonly accepted figure being 4:1.

The production of the effects in the genital organs on which the tests are based must necessarily be determined by the availability to the organs in question of the estrogenic substance, i. e., the concentration in the blood stream, and on the capacity of these organs to utilize the substance or to store it pending use. On the latter questions, little definite is known. From the work quoted, it is known, however, that estrogenic activity disappears from the blood stream in a very short time after administration and that the genital tissues are not necessarily involved in this process. It appears, therefore, in consideration of the relative blood supply of these parts, that the genital tract has available only a small portion of any injected dose, even assuming that these tissues remove all the estrogenic substance that reaches them, which appears unlikely. There appears also to be a renal threshold for this substance; at least this apparently exists under certain conditions. On injection of a single large aqueous dose, absorption would be fairly rapid, with a resultant fairly high concentration in the blood stream. If a renal threshold exists, the higher the blood concentration the more likely is the substance to spill over into the urine and become unavailable. Whatever may be the ultimate factors involved in the disappearance of the activity, the evidence indicates that the estrous effect is dependent on a continuous action of the estrogenic substance. A single large dose, unless it is very large, results in but a brief action. When repeated injections are given, the blood stream concentration is of course not as high and the substance is not as likely to appear in the urine—at any rate, the genital tissues receive repeated rather than single stimulation. With oily solutions it is not difficult to understand on this basis why there should be no difference between single and multiple injections; the absorption is at best so slow that continuous action results even from a single injection, and the added depots formed by repeated administration apparently do not add materially to the effect.

There is evidence that the presence of other substances, the characters of which have not been fully studied, enhances the effectiveness⁷³ of estrogenic preparations. Possibly these are themselves active or modify the rate of absorption. It may be of some value to use the oily solutions clinically, but these generally are not very adaptable to repeated hypodermic administration in the human being (usually olive oil, or some similar vegetable oil is used as solvent).

It appears that the method of assay is of little importance, provided it furnishes an indication of the possible activity of the preparation. It is certain that the multiple injection technic provides the most sensitive test available. That alone should commend it. The single injection technic with either aqueous or oily solutions appears incapable of detecting lower limits of activity. A ratio between the clinical effectiveness and the assay unit, whatever that may be, can and should eventually be established. It appears to be true that workers in different

laboratories can check one another with better agreement when using oily than when using aqueous preparations. This is undoubtedly due to the lesser sensitiveness, because a difference in less than 20 Doisy units cannot even be detected by this method. The Council believes that the factors underlying the variability of the Allen-Doisy method should receive careful study rather than that this method should be discarded in favor of one less sensitive. These factors have already been indicated by the work of Frank, and of Fee, Marrian and Parkes, already quoted.

Deterioration of Commercial Products.—A number of reports have appeared in the literature that independent assays have revealed either a complete lack of potency or a diminution of potency from that indicated on the labels of commercial products. The methods of assay are not stated and, therefore, adequate discussion is not possible.

CLINICAL USE OF THEELIN AND RELATED PREPARATIONS⁷⁴

Theelin and related preparations⁷⁵ have been used in practically all the special ills the human female "is heir to"; even the male has not escaped. The results in general have been quite disappointing, despite the abundance of case reports available, numbering by now several thousand. In the light of the previous discussion and that which follows, it is not surprising that this should be so; only a very few workers have made any attempt to determine whether in a particular case under consideration a real deficiency exists in the "hormone" which it is proposed to supply, and if such a deficiency is shown actually to occur, whether the particular preparation administered can really remedy the lack.

The work of Frank and of others, already referred to, has demonstrated that the clinical pictures in menstrual and associated disorders furnish little or no definite indication as to the quantity present, in blood or urine, of any of the particular endocrine factors involved in the normal sexual cycle. Here-with are reproduced charts from Mazer and Goldstein^{23b} and from Frank,^{23d} which indicate in some degree the normal and pathologic variations of these endocrine products in blood and urine.

It cannot be too strongly emphasized that so long as the conditions which determine the concentrations of the sex-endocrine substances in blood and tissues, the sensitiveness of the tissues to these substances, the rates of excretion, and so on, are but little understood, endocrine therapy will remain a hit and miss procedure. This is especially true with the shotgun variety exemplified by the organotherapy of certain commercialized extracts which Frank has so aptly described as "heterogeneous mixtures of inert substances which include all but the hoof and hide of our domestic animals."

F. H. A. Marshall has stated, "The use of [estrogenic substance] is only indicated in cases where there is evidence of a natural deficiency of this substance as with certain types of amenorrhea, or after ovarian extirpation, and, much more problematically, at the time of the menopause. The indiscriminate usage of [estrogenic substance] for other disorders has no basis in physiologic fact, and may justly be stigma-

69. Treva: Proc. Roy. Soc., series B 101: 481, 1927 (cited from Burn).

70. D'Amour, F. E., and Gustavson, R. G.: J. Pharmacol. & Exper. Therap. 40: 485, 1930.

71. Becker, T. J.; Mellish, C. N.; D'Amour, F. E., and Gustavson, R. G.: J. Pharmacol. & Exper. Therap. 42: 693 (Dec.) 1931.

72. Marrian, G. F., and Parkes, A. S.: J. Physiol. 67: 389, 1929.

73. Dodds, E. C.: Tr. Am. Gynec. Soc. 56: 134, 1931.

74. Pratt, J. P., and Allen, Edgar: J. A. M. A. 86: 1964 (June 26) 1926. Novak, Emil, *ibid.* 90: 339 (Feb. 4) 1928. King, J. T., Jr., and Patterson, Ellen, *ibid.* 91: 1423 (Nov. 10) 1928. Council Report, *ibid.* 91: 1193 (Oct. 20) 1928. Dodds, E. C., and Robertson, J. D.: Lancet 1: 1390, 1930. Campbell, A. D., and Collip, J. B.: Canad. M. A. J. 22: 219 (Feb.) 1930. Novak, Emil: J. A. M. A. 95: 1225 (Oct. 25) 1930. Gardiner-Hill and Smith: Lancet 1: 464, 1931. Morse, A. H.: Yale J. Biol. Med. 2: 397 (May) 1931. Hamblen, E. C.: Endocrinology 15: 184 (May-June) 1931. Kincaid, H. L.: Texas State J. Med. 27: 313 (Aug.) 1931. Novak, Emil, and Hurd, G. G.: Am. J. Obst. & Gynec. 22: 501 (Oct.) 1931. Hamblen, E. C.: Virginia M. Monthly 58: 509 (Nov.) 1931. Frank, R. T.: J. A. M. A. 97: 1852 (Dec. 19) 1931. Gerhardt, L., *abstr. Obst.* 98: 2033 (June 4) 1932. Kurzrok, R., and Ratner, S.: Am. J. Obst. & Gynec. 23: 689 (May) 1932. Geist, S. H., and Spielman, F.: *ibid.* 23: 697, 701 (May) 1932. Hamblen, E. C., South, M., & S.: J. 94: 339 (June) 1932. Werner, A. A.: Proc. Soc. Exper. Biol. & Med. 29: 1142 (June) 1932. Hirst, J. C.: J. M. Soc. New Jersey 29: 574 (July) 1932. Kurzrok, R.: Endocrinology 16: 361, 366 (July-Aug.) 1932. Novak, Emil; South, M. J. 25: 856 (Aug.) 1932. Mazer, C., and Goldstein, L.: Clinical Endocrinology of the Female, Philadelphia, 1932. Allen, Edgar, editor: Sex and Internal Secretions, Baltimore, Williams and Wilkins Company, 1932. Kauffmann, C.: Zentralbl. f. Gynäk. 57: 42 (Jan. 7) 1933. Werner, A. A., and Collip, W. D.: J. A. M. A. 100: 633 (March 4) 1933.

75. While other preparations, in particular Amniotin (Squibb), have been found in experimental and in clinical use apparently to produce effects comparable to those of the crystalline Theelin, all such products have been classed here under the generic term "estrogenic substance." This is not intended as reflection on the potency or possible usefulness of such products.

tized as quackery."^{75a} As will be noted from the data presented in this report, even the conservative indications suggested by this competent investigator have not yet been fully substantiated in actual clinical practice.

The respective rôles played by the various endocrine factors in menstruation is not clear, nor in fact is the actual mechanism of menstruation known. The recent work on this subject, as quoted, indicates that the process is a resultant of the complex interaction of a number of endocrine factors. Blood and urine assays furnish some idea of the relative concentrations in body

smaller, and posterior hypophyses much larger than normal, and markedly hyperplastic thyroid together with other changes of a less serious nature. Similar changes in the ovaries of immature and mature mice have been reported by Hauptstein following the repeated injection of large doses.⁷⁷

The findings of Lacassagne on the incidence of spontaneous carcinomas in mice, quoted above,^{53a} may possibly be of significance in this connection (although the limited number of observations and the absence of suitable control data with the oil used as solvent, renders this questionable). Evidence of deleterious effect from the clinical administration of estrogenic substance is not conclusive, but the possibility deserves serious consideration, particularly if the large doses more recently employed clinically should come into common usage.

The question of adequate therapeutic dosage remains also a moot point. Marrian and Parkes⁷⁸ have pointed out that the unit dosage which produces the estrous response used for assay in mice is insufficient to produce the full response characteristic of normal estrus; the latter requires at least 200 times the unit assay dosage. They assume, therefore, that a quantity of about 200 mouse units is produced by the animal at each estrus. This is probably an unwarranted assumption, since no definite relationship has been shown to exist between the natural output and the amount required to produce an equivalent effect when injected. Marrian and Parkes suggest that if, on a weight for weight basis, an equivalent amount is produced by the human being during the corresponding stage of the cycle, 400,000 mouse units would be required for complete substitution therapy. Recently, C. Kaufmann⁷⁴ and Werner and Collier⁷⁴ have reported the use of large doses of estrogenic substance in surgically castrated women. Kaufmann injected in a 22 year old patient, 5 years after ovariectomy, 10,000 to 20,000 mouse units a day for 25 days to a total of 300,000 to 320,000 units, followed by a total of 90 rabbit units of corpus luteum factor (progesterin) during a period of 6 days; bleeding ensued for 68 hours from an endometrium of the menstrual type. Werner and Collier reported four similar cases in which daily injection of 200 to 400 rat units of Theelin over a period of 89 to 93 days resulted in repeated uterine bleeding during the treatment; the endometrium, however, was of the interval type.

Other physiologic effects, including the subjective response, were similar to those occurring in the normal cycle (these latter also were noted in a fifth patient, similarly treated, in whom the fundus of the uterus had been extirpated). Similar but not such striking effects had been reported by Mazer and Goldstein.

In the light of present-day evidence, the anterior pituitary-like⁷⁹ and the corpus luteum preparations appear to offer more promise of therapeutic usefulness than the estrogenic preparations. By comparison with the reports published on the latter, those on the use of luteinizing preparations in functional uterine hemorrhage indicate a fairly high percentage of successful treatment.

Theelin has been used with some success in hemophilia. Birch⁸² has treated thirty-five cases, and other reports⁸⁰ have

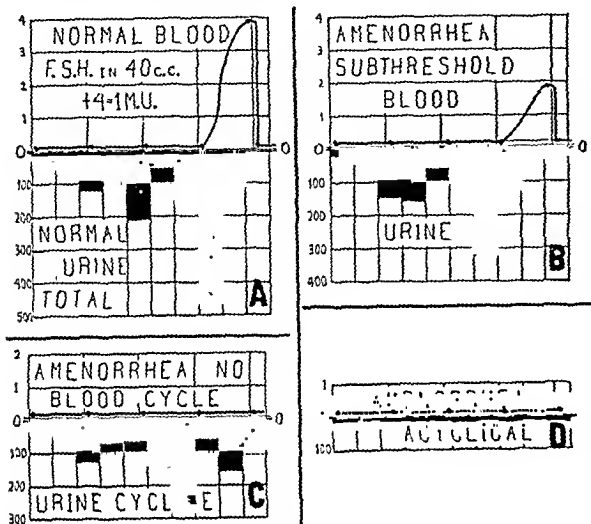


Fig. 3.—Graphs of specimens of blood and of urine showing curve of estrogenic substance in the blood samples (40 cc.), as well as total mouse units excreted in the urine: A, normal fertile woman shown for comparison; B, amenorrhea (or sterility) with subthreshold blood cycle, and fairly normal urine cycle; C, amenorrhea without blood cycle but with urine cycle; D, acyclical amenorrhea (reproduced through the courtesy of R. T. Frank^{82d}).

fluids of estrogenic and preputiary factors, as compared with the normal; but even with this information, which in itself is by no means complete, attempts at replacement therapy have generally failed. Many observers have emphasized the necessity for cyclic variations in the treatment in attempts to reproduce the natural concentration curves; somewhat better results have been claimed for this method; but even here, where definite effort has been made to treat the problem with a certain rationality, the benefit received by the patients has not been convincing.

A few clinicians, too few, unfortunately, have attempted to rule out the psychic factors in this problem.⁷⁶ Where this has been done, the results indicate that the chief benefit furnished the patient has been psychogenic.

Mazer and Goldstein believe that estrogenic substance in adequate dosage is useful in the treatment of certain cases of genital hypoplasia of not too long standing, of selected cases of amenorrhea and "primary" dysmenorrhea and for the relief of the vasomotor symptoms of the menopause; but here also the results are not completely convincing. In surgical or radiation castration, estrogenic substance can induce uterine bleeding if the treatment is started early enough or if the dosage is large enough; but this is not cyclic (except in the cases of Werner and Collier, reported below). Certain amenorrheic patients can be made to bleed by injection of Theelin; just what benefit such patients derive from the bleeding alone is highly questionable.

The results obtained in the menopause have been variable; benefit has been reported by some workers, but this has been no better than others have obtained with nonspecific treatment.

The work of Kunde and her co-workers and that of Hauptstein emphasize the necessity for great caution in the clinical use of estrogenic substance. The daily injection into immature dogs of from 25 to 800 rat units for six to seventeen weeks resulted in relatively sclerotic ovaries less than one-half the size of those in control dogs, anterior hypophyses much

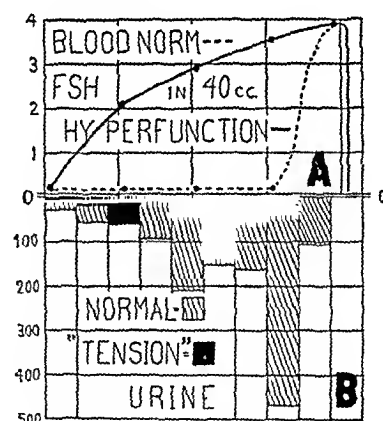


Fig. 4.—Graph showing the concentration curves of estrogenic substance in blood, and total output in urine (mouse units): A, puberty and premenstrual bleeding; broken line indicates normal curve, solid line "hyperfunction"; B, total urine output: normal (shaded) and "hypertension" (solid black) due to underexcretion (reproduced through the courtesy of R. T. Frank^{82d}).

77. Kunde, M. M., and others: *Proc. Soc. Exper. Biol. & Med.* **22**: 122 (Nov.) 1930; *Am. J. Physiol.* **95**: 630 (Dec.) 1930. Hauptstein, P.: *Endokrinologie* **8**: 169, 1931.

78. Marrian, G. F., and Parkes, A. S.: *J. Physiol.* **69**: 372, 1930.

79. Novak, Emil, and Hurd, G. G.: *Am. J. Obst. & Gynec.* **22**: 501 (Oct.) 1931.

80. White, C. E.: *J. Oklahoma M. A.* **25**: 304 (July) 1932. Kimm, H. T., and Van Allen, C. M.: *J. A. M. A.* **99**: 991 (Sept. 17) 1932.

75a. Marshall, F. H. A.: *Brit. M. J.* **2**: 232 (Aug. 6) 1932.

76. Dadds, E. C.: *Am. J. Obst. & Gynec.* **22**: 520 (Oct.) 1931. Frank, Novak and others.⁷⁴

appeared since her preliminary work. Birch claims better results with extracts of whole ovary than with Theelin alone and considers the latter as of value chiefly during actual hemorrhage. The precise evaluation of the endocrine factors in hemophilia therefore remains to be made in the future.

R. T. Frank,⁸¹ whose experience with estrogenic substance has been quite extensive, states: "While such products as thyroid substance, insulin and parathyroid produce striking and concordant results in appropriate cases, the opposite applies even to the few potent extracts used in the genital sphere. . . . Our hopes have been dashed because of the fact that the potent [estrogenic substance] does not cause the anticipated therapeutic results. This is fully explained since we recognize that this now purified product acts solely on the tubular tract, and according to competent testimony, when given in large doses over long periods, eventually causes sclerosis of the ovaries." Again, he states: "I think that faith cures and Christian science could produce as good results. I must confess that, after having faithfully and continuously worked with [estrogenic substance] for more than twenty-five years, I am forced to acknowledge that this drug has given no therapeutic results."

Mazer and Goldstein state:⁸² "In our enthusiasm for hormonal therapy we must not forget that the constitutional symptoms of the menopause often yield to hygienic and dietetic measures, and to such sedative drugs as bromides and barbitol derivatives, and we must not likewise forget that the condition is transitory and self limiting."

The prolonged clinical administration of Theelin can produce certain definite effects; but, as Frank has pointed out, these are not the desired effects: some enlargement of the uterus, with endometrial hyperplasia, a sense of fullness in the pelvis; occasionally uterine bleeding; some enlargement of and a sense of fullness in the breasts. Of these, the uterine bleeding alone can be said to approach the desired therapeutic result; but what effect the bleeding per se has on the health of the individual, aside from the psychic benefit derived therefrom, cannot be answered definitely at this time. The psychic response, i. e., subjective improvement, has been attained to the same degree when the Theelin injections have been intermitted with those of physiologic solution of sodium chloride or other inactive preparations, and when nonspecific general therapy has been instituted. Consequently, it cannot at this time be said that Theelin has any specific indication in the treatment of menstrual disturbances.

In all fairness, however, it must be admitted that the subjective response incident on Theelin therapy may well be real. The difficulty arises in evaluating in some satisfactory manner the psychic state of the patient. To date, even with the data furnished by the careful, if necessarily limited, work of Werner and Collier, the evidence must be considered inconclusive.

The place of Theelin and related products in gynecologic therapy remains for the future to decide. Great caution is necessary in the use of these preparations and greater caution in making deductions from it. The indiscriminate use is likely to do more harm than good, not only because of the effect of the preparations themselves but also because general therapeutic measures intended to aid the organism in restoring its own equilibrium are likely to be neglected.

The Council believes that the future of endocrine therapy in the sexual sphere appears quite promising. But it is not surprising in view of the short time that has elapsed since the introduction of active preparations commercially, that little should be known about their therapeutic possibilities. Enthusiasm in this case has in large part seriously interfered with clinical judgment; the clinical use has kept far ahead of the laboratory data; controlled observations have been few indeed. It is time to call attention to the fact that most of the basic facts should first be worked out in the laboratory before they are tried in the clinic.

The Council will undertake further consideration of preparations of the female sex "hormones" as additional studies on the applications of these substances become available, and as the indications for and limitations of their use become more clearly defined.

81. Frank, R. T.: J. A. M. A 97: 1852 (Dec. 19) 1931; S. Clin. North America 12: 310 (April) 1932.

82. Mazer, C., and Goldstein, L.: Clinical Endocrinology of the Female, Philadelphia, 1932, p. 426.

Committee on Foods

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary.

PLANTATION BRAND HAWAIIAN PINEAPPLE (Sliced)

(Standard Quality; Vacuum Packed) Dole 2

PLANTATION BRAND HAWAIIAN PINEAPPLE (Crushed)

(Standard Quality) Dole 2

UKULELE BRAND HALF SLICES HAWAIIAN PINEAPPLE

(Vacuum Packed) Dole 3

Manufacturer.—The Hawaiian Pineapple Company, Ltd., San Francisco.

Description.—"Dole 2" or "grade 2": This grade includes sliced, crushed fruit and tidbits as does dole 1. The material is graded 2 because it is less evenly cut and less uniform in color than is grade 1. The fruit is packed in concentrated pineapple juice syrup (20 per cent sugar).

"Dole 3" or "grade 3": This grade comprises broken slices packed in concentrated pineapple juice syrup (20 per cent sugar).

Manufacture.—See this section for Paradise Island Brand Hawaiian Finest Quality Pineapple (THE JOURNAL, April 8, 1933, p. 1106).

Analysis (submitted by manufacturer).—

	per cent
Moisture	83.4
Ash	0.5
Fat (ether extract).....	0.1
Protein (N X 6.25).....	0.3
Reducing sugars as invert.....	6.3
Sucrose (copper reduction method).....	6.6
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference).....	14.5
Titrateable acidity as citric acid.....	0.9
pH	3.9

Calories.—0.7 per gram; 17 per ounce.

Vitamins and Claims of Manufacturer.—See these sections for Paradise Island Brand Hawaiian Finest Quality Pineapple.

OSCAR MAYER'S GERMAN WIENERS

(Casings Artificially Colored)

Manufacturer.—Oscar Mayer & Company, Packers, Chicago, Ill., and Madison, Wis.

Description.—Wiener sausage prepared from cured pork and beef meat, spiced, smoked and cooked. The casings are artificially colored. The product is U. S. inspected and passed by the Department of Agriculture.

Manufacture.—Top quality sausage beef bulls and hog muscle tissue with some attached fat prepared in the company's plant are used. The spice ingredients include oleoresins and certain essential oils.

The beef, admixed with definite quantities of sodium nitrate, sodium nitrite, salt and water is spread in pans and cured for three days.

The sausage meat contains green shoulder pork admixed with definite amounts of the prepared beef, to which are added the aforementioned curing ingredients in proper proportions. Spices and enough water to give the sausages the proper consistency are added. In no case does the finished product contain more than 10 per cent moisture over that of the raw material (a regulation of the United States Bureau of Animal Industry).

The sausage meat is stuffed by hand by air pressure into clean and tender sheep gut casings. The sausages are linked five inches long, hung on smoke-sticks, washed with water, and placed in a cooler to cure, after which they are thoroughly

smoked at a temperature of 43 C. or higher. Hardwood sawdust and gas fuel furnish the smoke and heat. The smoked sausages are cooked in water containing a small amount of vegetable color for twelve minutes at 82 C., are water-chilled, and are held over night in a cooler before packing. The sausages may be eaten cold or after heating; they need not be boiled. The cooking is sufficient to kill any trichinae that may be present.

The sausages are banded with yellow bands for identification and packed in cartons by girls who disinfect their hands in dilute sodium hypochlorite solution each half hour. The Bureau of Animal Industry regularly tests the product for moisture, nitrites and other possible adulterants.

Analysis (submitted by manufacturer).—	per cent
Moisture	58.6
Ash	2.4
Fat (ether extract).....	26.3
Protein (N \times 6.25).....	12.6
Reducing sugars as invert.....	0.0
Sucrose	0.0
Crude fiber	0.05
Starch	0.0
Carbohydrates other than crude fiber (by difference)...	0.05

Calories.—2.9 per gram; 82 per ounce.

Claims of Manufacturer.—May be eaten either hot or cold.

JAY-BEE FISHEL'S AYRSHIRE MILK BREAD

Manufacturer.—J. B. Fishel's Bakery, York, Pa.

Description.—A milk bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817) prepared from flour, milk, sucrose, salt, yeast, shortening, malt syrup, and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Analysis (submitted by manufacturer).—	per cent
Moisture (entire loaf).....	32.5
Ash	2.2
Fat	3.7
Protein (N \times 6.25).....	11.3
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)...	50.0

Calories.—2.8 per gram; 80 per ounce.

Claims of Manufacturer.—Conforms to the United States Department of Agriculture definition and standard for milk bread.

RED ELEPHANT HARD WHEAT FLOUR (Matured, Bleached)

Manufacturer.—Fant Milling Company, Sherman, Texas.

Description.—A "long patent" hard wheat flour; bleached.

Manufacture.—Selected hard wheat is cleaned, washed, tempered, scoured and milled by essentially the same procedures as described in THE JOURNAL, June 28, 1932, page 2210. Chosen flour streams are blended and bleached with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour) and nitrogen trichloride (one-ninth ounce per 196 pounds of flour).

Claims of Manufacturer.—The flour is designed for commercial baking uses.

STROEHMANN'S MILK BREAD (SLICED)

Manufacturer.—Stroehmann Brothers Company, Harrisburg, Pa.

Description.—A milk bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817) prepared from patent flour, water, sweetened skimmed condensed milk, lard, yeast, salt, butter, dry skim milk, malt syrup and a yeast food mixture of calcium acid phosphate, ammonium sulphate, sodium chloride, potassium bromate, potassium iodate and corn starch.

Analysis (submitted by manufacturer).—	per cent
Moisture (entire loaf).....	38.0
Ash	0.7
Fat	3.0
Protein (N \times 6.25).....	12.1
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)...	45.9

Calories.—2.6 per gram; 74 per ounce.

Claims of Manufacturer.—A milk bread conforming to the United States Department of Agriculture definition and standard.

1. BUTTER CUP BRAND WHITE SYRUP
2. CONSOLATION BRAND WHITE TABLE SYRUP
3. DEERWOOD BRAND WHITE SYRUP
4. DILLON'S RED LABEL BRAND CRYSTAL WHITE SYRUP
5. FAIRWAY BRAND WHITE TABLE SYRUP
6. FAIRWAY BRAND WHITE TABLE SYRUP
7. FAIRWAY BRAND WHITE TABLE SYRUP
8. GLICK BRAND CRYSTAL WHITE SYRUP
9. HARVEST HOME BRAND CRYSTAL WHITE TABLE SYRUP
10. N. J. C. PURE FOOD BRAND FANCY WHITE SYRUP
11. OZARK BEAUTY BRAND FANCY WHITE TABLE SYRUP
12. PORTAGE BRAND CRYSTAL WHITE SYRUP
13. RED RIBBON BRAND CRYSTAL WHITE SYRUP
14. SAMOS BRAND WHITE CRYSTAL SYRUP
15. SCHILLING'S NICOLET CRYSTAL WHITE SYRUP
16. BYERLY TROPHY BRAND WHITE SYRUP
17. USEMORE BRAND WHITE TABLE SYRUP
18. WHITE HOUSE BRAND FANCY TABLE SYRUP

(85 per cent Corn Syrup, 15 per cent Rock Candy Syrup)

Packer.—D. B. Scully Syrup Company, Chicago.

Distributors.—

1. Tindall, Kolbe & McDowell Co., Milwaukee.
2. New York Store Merc. Co., Cairo, Ill.
3. The Copps Company, Stevens Point, Wis.
4. J. S. Dillon and Sons Stores Company, Inc., The Yellow Front Cash Food Stores, Hutchinson, Newton, Winfield, Great Bend, Dodge City, Larned, Kan.
5. Des Moines Wholesale Grocery Co., Des Moines.
6. Twin City Wholesale Grocer Co., St. Paul and Minneapolis.
7. Wood County Grocery Co., Wisconsin Rapids.
8. Glick Mercantile Co., Pittsburg, Kan.
9. Jett & Wood Merc. Co., Wichita, Kan., and Lamar Colo.
Jett & Wood Central Merc. Co., Hutchinson and Liberal, Kan.
10. Northern Jobbing Co., Chicago and St. Paul.
11. Pocahontas Grocery Co., Pocahontas, Ark.
12. Portage Wholesale Co., Portage, Wis.
13. Woodward Wholesale Grocery Co., Woodward, Okla.
14. Samos Wholesale Grocery Co., Cleveland.
15. Frank C. Schilling Co., Green Bay, Wis.
16. J. A. Byerly Co., Inc., Owosso, Mich.
17. Service Grocer Co., Detroit.
18. Plumb & Nelson Co., Manitowoc, Wis.

Description.—These syrups are the same product as the accepted D. B. Scully White Crystal Syrup; table syrup, corn syrup base (85 per cent) with rock candy syrup (15 per cent) (THE JOURNAL, April 15, 1933, p. 1174).

NEW WAY FLOUR (BLEACHED)

Manufacturer.—Texas Star Flour Mills, Galveston, Texas.

Description.—An "all purpose" hard winter wheat patent flour; bleached.

Manufacture.—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, and bleached with nitrogen trichloride ($\frac{1}{8}$ oz. per 196 pounds) and with a mixture of calcium phosphate and benzoyl peroxide (1 part to 50,000 parts of flour).

Claims of Manufacturer.—This flour is designed for bread baking.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 29, 1933

PROPHYLAXIS OF OPHTHALMIA NEONATORUM COMPULSORY IN ILLINOIS

The application to the eyes of new-born infants of silver nitrate or other approved prophylactic for the prevention of ophthalmia neonatorum will become mandatory in Illinois, July 1, under an act recently approved by Governor Horner. The act amends the present law, which provides only for giving information and advice concerning this disease to parents and for investigating cases after they develop.

Last year a similar bill passed the general assembly of Illinois. Then vociferous opposition by Christian scientists, followed by Attorney General Carlstrom's opinion that the bill was unconstitutional, apparently led Governor Emmerson to veto it. This year Attorney General Kerner submitted to Governor Horner a masterly, well reasoned opinion. True, he expressed some misgivings concerning the constitutionality of such an act in Illinois, but he pointed out at the same time that an act passed by the general assembly is to be regarded as constitutional until the contrary is demonstrated beyond a reasonable doubt. The Supreme Court of Illinois, according to Attorney General Kerner's opinion, has tended to confine the exercise of the police power of the state within limits narrower than those conceded in other states and by the Supreme Court of the United States. Governor Horner, however, called attention to the fact that similar legislation had been enacted in other states with apparent benefit, that the constitutionality of such legislation had never been attacked, and that the constitutionality of the present act could not be determined unless he approved the act; accordingly, he approved it.

From a medical point of view there is abundant basis of fact to support the constitutionality of this act under the criterion of constitutionality deduced by Attorney General Kerner from the decisions of the Illinois Supreme Court. "Throughout all of these Illinois cases," says the attorney general, "runs the thought that a valid health police regulation, affecting personal

and property rights, safeguarded under the constitution, cannot be predicated upon a condition that does not exist but the existence of which is merely assumed or suspected." Not by the wildest stretch of the imagination can any one assert that the conditions that called forth the enactment of this legislation did not or do not exist and that they are merely assumed or suspected. The gonococcus, which causes by far the largest number of cases of ophthalmia neonatorum, is one of the most widely distributed of all known pathogenic germs, and pathogenic cocci of other kinds are certainly not restricted in distribution. They have their habitat in the birth passages of many women who are entirely innocent of wrong-doing and utterly ignorant of their presence. The fact that many women are free from such germs is not to the point. Legislation for the protection of the health of the people must be based on the condition of the people as a whole and adapted to their needs. To base such legislation on individual cases and to adapt it to the needs of individual persons is impracticable. It is impracticable in the present instance because the circumstances attending childbirth and the time available for effective prophylaxis after the child is born preclude the determination by a midwife or attending physician with reasonable certainty whether or not the mother is the carrier of infective organisms.

The constitutionality of this legislation for the protection of individual infants and of the public against the hazards of ophthalmia neonatorum and against the lifelong handicaps and expense of defective vision, including even total blindness, should never have been attacked. The protection afforded by the law will do no harm to a child whose eyes are not infected; it will prevent infection in those who might be subjected thereby to permanent blindness. More and more, enlightened legislators and judicial authorities are realizing the real responsibilities of the state in matters affecting the protection of the health of the child.

MILK VS. WINE

Certain American newspapers¹ have recently featured special foreign correspondence alleging that French physicians, "following the well known practice at Vichy, are prescribing more and more the moderate drinking of wine instead of milk for patients suffering from gastric or intestinal troubles." It is further reported that "one of the eminent physicians who are leading the antimilk campaign in favor of wine" regards it as a duty to inform the public about the physiologic advantages of wine. These statements, which have been widely circulated at a moment when the repeal of the Eighteenth Amendment is being discussed in every home, are already promoting numerous inquiries to physicians. It seems peculiarly unfortunate that the problem should be raised in this country at a period

1. For example, the New York Times, April 8, 1933.

when much effort continues to be expended in the attempts to promote a more liberal use of what has been termed "our most nearly perfect food," milk.² In a recent issue of *THE JOURNAL*, for example, Bernheim³ discussed the calcium problem of the American dietary and arrived at the conclusion that unless milk or cheese is included it would as a rule be "exceedingly difficult to fill the calcium need, since inordinately large amounts of other foods and water would have to be ingested, quantities far beyond the capacity of the normal individual."

The physiologic properties of wines are fairly well known. To what extent alcohol, which occurs in these fermented beverages in quantities ranging commonly from 8 to 20 per cent, is to be ranked as a possible food need not be debated at this time. From the standpoint of its caloric contribution in alcohol alone, a pint of wine of 10 per cent alcoholic strength would supply more than 300 calories. To this is added the varying amounts of sugar and "extract" in solution. Thus the food fuel is by no means negligible. Alcohol in this amount is likely to represent something more than a possible source of energy. It is not devoid of effects that are described either as physiologic or pharmacodynamic, depending on the point of view of the interpreter. The press reports, however, are not content with these familiar aspects! They report the startling allegation that wine also "is an antiseptic which kills cholera microbes. . . . Red wines kill the typhoid fever microbe in two hours. Dry wines kill it in twenty minutes." The colon bacilli also are reported to be the victims of the destructive action of such wines. Bacteriologists will, we are confident, be quite astounded by such claims of germicidal potency; while physiologists will wonder how alcohol can be induced to remain long enough in the alimentary tract to exercise this surprising germ-destroying function—particularly as it is so rapidly absorbed, even from the stomach. The French reports refer further to certain radioactivity, which "has not yet been entirely studied." This sounds like the familiar hoax of radioactive waters, which has reached the zenith of its conjuring power in this country. A well known American investigator once found that the radioactivity of some of the vaunted waters approximated that of unextolled sewage.

"Times have changed," so the press report further states, "because today, at Vichy, doctors no longer prescribe milk for their patients, but wine." Doubtless wine may have a place in the regimen of certain persons, though it continues to be proscribed in the United States. But it would be a step backward to permit exceptional and extreme circumstances—and particularly the doubtful recommendation of pseudoscience—to menace the growing appreciation of the value of

milk in the American dietary. Enthusiasts have called milk the modern elixir of life. It is not necessary, however, to deal with such superlatives in assigning to milk a dietary—and often a dietotherapeutic—rôle that even the choicest of vintages of the art of fermentation can never hope to rival.

THE FEMALE SEX HORMONES

Until recently, therapy employing so-called female sex hormones was limited largely to the use of desiccated ovarian products and various extracts without demonstrated value.¹ These were employed empirically with the hope that they might do good. Today the physician has available preparations of demonstrable potency in animals and of possible usefulness in human beings. Two, isolated in crystalline form, have been given the nonproprietary designations theelin and theelol.²

Elsewhere in this issue appears a comprehensive analysis by the Council on Pharmacy and Chemistry of the status of female sex endocrine therapy, particularly with estrogenic preparations. In few branches of physiologic research has experimental work progressed as rapidly as in this field, but clinical observations have not kept pace. Unfortunately, many of the products were submitted to uncontrolled clinical observations; inevitably this reacted to the discredit of endocrine therapy in ovarian and related disorders. A recent series of studies, published in *THE JOURNAL*, appears to have been carefully executed and promises stimulus to the therapeutic use of estrogenic preparations. Werner and Collier³ report that daily injection of theelin in five surgically castrated women over periods of from eighty-nine to ninety-three days resulted in repeated uterine bleeding during the treatment. In addition, such benefits as alleviation of symptoms of the menopause were noted. The cervix increased in vascularity; the endometrium showed hyperplasia to the normal intermenstrual but not to the premenstrual phase, and the breasts enlarged. Subjectively, improvement occurred in all the patients; indeed, libido was said to have increased in four. Obviously, all these results require extensive confirmation.

As indicated by the report of the Council, the evidence does not warrant extensive routine application to therapeutics of the results thus far achieved. Whether or not uterine bleeding per se, or the associated phenomena, are essential or even beneficial to the well being of women has not been established. In surgical and radiation castration and in the natural menopause, the beneficial effects seem to resolve into psychic improvement. If such subjective improve-

2. Crumrine, S. J., and Tobey, J. A.: *The Most Nearly Perfect Food—The Story of Milk*, Baltimore, Williams and Wilkins Company, 1930.

3. Bernheim, Aliee R.: Calcium Need and Calcium Utilization, *J. A. M. A.* 100:1001 (April 1) 1933.

1. Desiccated Ovarian Preparations for Oral Administration Omitted from N. N. R., *J. A. M. A.* 94:1997 (June 21) 1930; Injectable Ovarian Preparations Omitted from N. N. R., *ibid.* 98:402 (Jan. 30) 1932.

2. Theelin and Theelol, editorial, *J. A. M. A.* 97:33 (July 4) 1931; Theelin—and the Technic of Introducing New Drugs, *ibid.* 97:1541 (Nov. 21) 1931.

3. Werner, A. A., and Collier, W. D.: The Effect of Theelin Injections on the Castrated Woman, *J. A. M. A.* 100:633 (March 4) 1933.

ment is shown later to be constant and inseparably associated with the physical changes, the question of adequate dosage and the hardship associated with daily injections over indefinite periods require consideration.

Research with estrogenic substances, as the Council's report brings out, has been hampered by the confusion resulting from inability to compare the potencies of preparations used in different laboratories. Recently, however, the Health Organization of the League of Nations has undertaken to establish an international standard for such products.⁴ The standard preparation is to consist of crystalline material of the hydroxy-ketonic structure (theelin), made by combination of samples from various countries. It will, of course, take time for the work of the League's committee to reach consummation; but the action is a commendable step in the direction of greater comparative accuracy.

Current Comment

ESSENTIAL FATTY ACIDS

In 1929, G. O. and Mildred M. Burr¹ announced that in experimental animals given a ration extremely poor in fat but otherwise adequate there occurred retardation of growth together with other typical symptoms. Not only were the symptoms alleviated by giving a few milligrams of fat but the cure was brought about by the administration of either of the two unsaturated fatty acids linoleic and linolenic acids. The glycerides of the common saturated fatty acids were ineffective.² Apparently the necessary unsaturated fatty acids cannot be synthesized by the organism. These observations served to place linoleic and linolenic acids in the category of indispensable dietary factors along with the essential amino-acids, the vitamins and certain mineral elements. Supporting evidence³ was later brought forth showing that the syndrome was cured by the liquid fatty acids from coconut oil, by linoleic acid, and by the fatty acids of rice and corn starches. It was further stated that only those acids with two or more double bonds were effective in this respect. Subsequent studies⁴ indicated that in butter and in tung oil there were undetermined fatty acids which were essential in nutrition. The general thesis of the existence of indispensable fatty acids has not gone unchallenged. At least one of the symptoms—the dermatitis of the tail—has been said to be nonspecific.⁵ The question has been raised as to why the liver, with its ability to desaturate fatty acids, does not produce linoleic and linolenic acids from the corresponding

saturated fatty acids.⁶ Further, the unsaturation of the fatty acids of the tissue phospholipids in rats on a fat-poor diet is of the normal order of magnitude.⁷ On the other hand, in a recent report by Evans and Lepkovsky,⁸ experiments are described which indicate that the total body fat of animals grown on an adequate ration contains the indispensable fatty acids, whereas that from animals consuming a fat-free diet does not contain these dietary essentials. It is pointed out, however, that the efficacy of the fatty acids from the body fats of the various groups of animals is not parallel to the degree of unsaturation, which fact again raises the question as to the specificity of linoleic and linolenic acids. Experience has shown that the requisite quantity of certain dietary essentials is so small that it might well escape ordinary methods of analysis. The solution of the problem of the indispensability of fat in the ration may therefore depend finally on the refinements of chemical technic.

THE "LIFE CYCLE" OF THE TUBERCLE BACILLUS

Mellon and his co-workers¹ of the Western Pennsylvania Hospital have recently reported the results of the application of modern single cell methods of bacterial culture to a study of the "life cycle" of the tubercle bacillus. Starting with the classic acid-fast phase of the avian tubercle bacillus, the Pittsburgh investigators found that this familiar clinical type may "dissociate," "mutate" or "degenerate" into minute non-acid-fast cocci. Certain of these cocci show demonstrable nuclei. The nucleated cocci apparently conjugate, the male nucleus migrating into the female cytoplasm. The resulting fertilized female micro-organism divides, first into a non-acid-fast diplococcus, afterward into a non-acid-fast tetrad. This tetrad eventually breaks up into individual cocci, which are now without demonstrable nuclei. The resulting sexually regenerated non-nucleated cocci may germinate into non-acid-fast diphtheroids. These in turn may give rise to acid-fast cocci, which in time usually ripen into the acid-fast bacilli of classic morphology. Such pleomorphic phases of the tubercle bacillus have been previously reported by Miller² and numerous other investigators. Mellon, however, is the first to interpret the observed diplococcus and tetrad phases as the result of sexual conjugation. With numerous other pathogenic bacteria, variations in antigenicity or immunochemical specificity have been demonstrated in the different pleomorphic stages. In certain cases, vaccines and antisera prepared with one bacillary "variant" or "dissociate" are wholly inert against a second morphologic "mutant" of the same culture. Whether or not a similar pleochemism takes place with the tubercle bacillus has not yet been established.

4. Doisy, E. A.: *Science* **77**: 344 (April 7) 1933.

1. Burr, G. O., and Burr, Mildred M.: *J. Biol. Chem.* **82**: 345 (May) 1929.

2. Burr, G. O., and Burr, Mildred M.: *J. Biol. Chem.* **86**: 587 (April) 1930.

3. Evans, H. M., and Lepkovsky, Samuel: *J. Biol. Chem.* **96**: 143, 157 (April) 1932.

4. Burr, G. O.; Burr, Mildred M., and Miller, E. S.: *J. Biol. Chem.* **97**: 1 (July) 1932.

5. Hume, Eleanor M., and Smith, Hannah H.: *Biochem. J.* **25**: 300 (number 1) 1931.

6. Eggleston, P.: *Science Progress* **26**: 19, 1931-1932.

7. Sinclair, R. G.: *J. Biol. Chem.* **96**: 103 (April) 1932.

8. Evans, H. M., and Lepkovsky, Samuel: *J. Biol. Chem.* **99**: 231 (Dec.) 1932.

1. Mellon, R. R.; Richardson, R. D., and Fisher, L. W.: *Proc. Soc. Exper. Biol. & Med.* **30**: 80 (Oct.) 1932. Lindegren, C. C., and Mellon, R. R., *ibid.* **30**: 110 (Oct.) 1932.

2. Miller, F. R.: *J. Exper. Med.* **56**: 411 (Sept.) 1932.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago Daylight Saving Time, which is one hour faster than Central Standard Time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

- May 2. Food Advertising Popularity.
- May 4. Boys and Girls.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

- May 6. Overweight.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Twenty-Ninth Annual Meeting, held in Chicago, Feb. 13 and 14, 1933

(Continued from page 1260)

DR. T. J. CROWE, Dallas, Texas, in the Chair

THE FEDERATION OF STATE MEDICAL BOARDS OF THE UNITED STATES

FEBRUARY 14—MORNING

The Philosophy of Medical Licensure

DR. H. M. PLATTER, Columbus, Ohio: The fundamental duty which we, as executives, owe to the profession is that we shall give recognition only to well prepared graduates of reputable medical schools who practice ethical medicine. Boards of licensure must closely supervise licensees and institute proceedings for suspension or revocation of licenses of individuals who are guilty of transgression. I can bear testimony that after honest effort to enforce a medical practice act which has been held constitutional the prosecution of cultists has proved of little lasting benefit. My conviction is that most of this effort is wasted and that practice by unlicensed individuals will continue regardless of how much is expended to eliminate it.

Our department holds hearings quarterly to supervise and control the practices of men holding our licenses. We make in a year about 500 investigations and convict approximately 100 individuals who violate our medical practice act. The records will show that many of those convicted escape with a minimum fine or suspended fine and continue their practices owing to indifference of the courts and the general disregard on the part of all people for regulation and law observance. A certain amount of prosecution and investigation will be necessary if we adhere to the American idea of control of cultism. But in all fairness to the executives it should be understood by medical men, health officers and medical educators that cult elimination is impossible, particularly if we include Christian science among the cults, where it rightfully belongs.

I agree with most of the conclusions arrived at by the Commission on Medical Education, but I dissent from the idea that licensure should be passed on to graduates from approved medical schools because this practice is followed in most countries. I dissent also with the idea that to boards of licensure must be delegated all of the effort to enforce medical practice acts. If we could, I would advise a liberal repeal of statutes which cannot be enforced or which visit additional requirements on the qualified man and substitute therefor an agreed on minimum standard. Unfortunately, cults have gained considerable legal recognition in the several states. For the good of licensure, all such provisions should be repealed.

Dental Licensure Problems

J. V. CONZETT, D.D.S., Dubuque, Iowa: Dentistry is a young profession, not having yet attained its first century. The first dental college was organized in Baltimore in 1839, this making the Baltimore College of Dental Surgery the oldest

dental college in the world. It was organized by Drs. Hayden and Harris, because the Baltimore Medical College refused to place a chair of dentistry in that institution. Dentistry was looked on as a trade, or at best as a prosthetic art, ministering to the esthetic values of the mouth and teeth, and dentistry was refused recognition as a branch or part of the healing profession. I do not in any way bring this as an accusation against medicine, for I give place to no man in my admiration for that profession. Now dentistry is a separate profession, with its own colleges, degree and literature. This fact, which is peculiar to America, has made American dentistry the recognized leader of the dental profession of the world.

After the institution of the first dental college, others rapidly followed. As there were no limiting laws to regulate the profession, these colleges were a law unto themselves. The entrance requirements were nil. There was a chaotic condition in dental education. It early became apparent that some regulation of the practice of dentistry was necessary; therefore the various states began to place laws on their statute books making it illegal to practice without the authority of the state as defined by the law. It will be remembered that the dental schools in the early years had no generally accepted minimum entrance requirement or rules governing promotion and graduation, therefore the product of the various schools was decidedly irregular. Dental colleges grew rapidly. Some of them were little better than advertising offices catering to the public and, at the end of a stipulated term, furnishing diplomas to the students. This condition became so distressing that the National Association of Dental Examiners in 1909 advised the appointment of an educational council, appointed five men from its membership to act as a nucleus of such a committee, and suggested that the National Dental Association and the American Association of Dental Teachers appoint like committees to join in the organization of a joint educational council. The Dental Educational Council of America was formed with five men from each of the parent organizations as members. Attempts were made to draft minimum requirements of entrance, promotional and graduation status. The better schools gladly accepted the suggestions but, not having the necessary authority, the council found its work decidedly uphill. When the war came, it was found in an attempt to organize a dental department in the Surgeon General's Office that there was so low a professional ability in the product of some schools that a diploma from a school, or even a certificate from a state board, did not mean that the applicant was competent to practice his profession in the army. Surgeon General Gorgas then called on the Dental Educational Council of America to make a survey of the schools, grade them as A, B and C, and said that he would accept the graduates of the A and B schools and give them commissions in the army but that the product of the C schools would have to take their places in the ranks. This gave the council the power it needed, and immediately the low grade schools began to make a rush to make good and attempted to attain the minimum requirements as suggested by the council. This made possible the elimination of many of the poor and commercial schools, and during the progress of the war sincere attempts to improve were made by those schools. Then the Carnegie Foundation made the survey of dental education, which was followed by the grading of all schools in the United States as A, B and C, a potent factor in the elevation of the teaching conditions in the various schools. As a result, most of the dental colleges in the country now carry an A rating. The weak schools have been eliminated, and many that needed assistance have merged, made university connections, and in other ways advanced their positions educationally so that now the educational status of the dental colleges of the United States is very good. That there is still room for improvement, no one will deny.

The one drawback to dentistry at present is that a man legally capable of practicing in one state is not so qualified in an adjoining or distant state. The medical or the dental degree should carry with it the authority to practice that profession in any state in the Union. Now that the colleges have been standardized, there is a great need that the state boards should be standardized. Some time ago the Dental Educational Council of America attempted to find some method whereby such a plan might be put into effect, but after mature study it was unable to find a point of entrance for such a

survey. The alternative and the ideal is a central examining board that would be able to conduct examinations for all candidates for the profession and have their decisions recognized in all the states of the Union. This attempt has been made and there is now the National Board of Dental Examiners, composed of fifteen members selected from the three national dental organizations, the American Dental Association, the National Association of Dental Examiners, and the American Association of Dental Teachers. The difficulty with the National Board of Dental Examiners is that the various state boards have not the legal right to accept the national board's certificates; but it is hoped that that difficulty will soon be overcome by proper legislation. With such a board the work of the teaching staffs in the dental colleges might be lightened, for such a board might take charge of the final examinations in the colleges in lieu of the final examinations on the part of the college authorities. The diploma and the certificate of the national board would thus harmonize and be recognized throughout the United States.

The state board of dental examiners is the only authority recognized by the state laws; consequently, a national board could operate only through the cooperation of the state board. It and it only would be the final authority and could at will accept or reject the findings of the national board in all or any specific case. This is the case now and must be in the future until some method can be devised whereby a national law could take the place of state laws in all health matters. It might be premature to discuss the matter of the regulation of the practice and conduct of those already in practice; but in view of the fact that the large majority of physicians and dentists begin to retrogress the moment their diplomas are placed in their hands and in view of the tremendous importance of the ability and honesty of the members of the health professions to the health of the people, it would seem wise to adopt some plan of supervising the fitness of the men in the professions to continue their administrations to public health.

I confidently expect that the physician or the dentist of the future will have to give evidence in some way, to properly constituted authorities, of his ability to continue efficiently his ministrations to the public in a health program. In our hands is placed the responsibility of the health and happiness of the people. If we can adopt a program whereby we can unite in the education, examination and continued edification of the members of our professions we shall not only advance the interests of all of the members but gain the confidence of the public in a manner that has never yet been attained.

Training for Practice Abroad

DR. WILLIAM D. CUTTER, Chicago: It is my purpose to deal with the regulations governing medical education and licensure in Great Britain and northern Ireland, France, Germany, Austria, Italy and Switzerland.

In France and Germany particularly opportunities for practical experience such as are in this country provided by the clinical clerkship and the internship are not granted to American students. The completion of the required course of study, therefore, even though attested by a university degree, cannot be regarded as equivalent to training given in approved medical colleges in the United States and Canada. Furthermore, it has been shown that in continental Europe it is practically impossible for an American citizen to qualify for licensure. This fact may well be brought to the attention of those representatives of other nationalities who may be inclined to protest against the formulation of rules designed to protect the standards of medical practice in this country.

Foreign Medical Graduates in New York State

DR. HAROLD RYPINS, Albany, N. Y.: Prior to the war, the number of foreign graduates coming to New York State was not very great and in general the graduate of any reputable European medical faculty was accepted for admission to the New York medical licensing examination on the basis of much less evidence as to the quality of his professional training than that required of a graduate of an American or a Canadian school. Since the war, the number of such foreign graduates has gradually increased and the members of the board of medical examiners have found it increasingly difficult to evaluate the medical knowledge of these foreign applicants. In 1931 I

compiled statistics showing the relative achievements of 6,462 American and foreign graduates admitted to the New York medical licensing examination during the six-year period 1925-1930, inclusive. At that time there were 5,026 American graduates (including Canadians), constituting 77.7 per cent of all the candidates, among whom there were 9.1 per cent of failures. In contrast to this, there were 1,436 foreign graduates, comprising 22.3 per cent of all the candidates, of whom there were 44.5 per cent of failures. These data were presented at a joint meeting of the New York board of medical examiners and the council of deans of New York State medical schools. On the request of these bodies, who felt that this problem was national, I presented the data to the Council on Medical Education and Hospitals at its meeting in Philadelphia in June, 1931. As a result, on the recommendation of the Council on Medical Education and Hospitals, the House of Delegates passed a resolution that the Council on Medical Education and Hospitals make a classification of foreign medical schools where students of American citizenship are in attendance, along the lines applied in the classification of American medical colleges.

In the Aug. 29, 1931, issue of *THE JOURNAL*, the Council reported a survey of American students studying medicine abroad, reports having been received from 98 of the 165 foreign schools questioned. This survey revealed that there were 630 such students (exclusive of Canada). A similar survey conducted by the Council and published in *THE JOURNAL*, Aug. 17, 1932, showed 1,174 students (exclusive of Canada) in foreign medical schools for the year 1931-1932, or almost double the number for the previous year. In addition, information was received that more than 500 more New York students were planning to emigrate during the summer and fall of 1932, so that by this time there are between 1,500 and 2,000 American boys studying medicine abroad.

During the last eight years, the number of foreign-born graduates has steadily diminished, probably owing to the operation of the immigrant quota. The number of foreign-born candidates, 126, admitted to the New York medical licensing examination in 1932 is less than half of those admitted, 294, in 1925, but the proportion of failures among foreign-born students has increased from 47.7 per cent in 1925 to 62.7 per cent in 1932, having reached a high point of 74 per cent in 1930.

By far the larger group consists of American students studying in Europe, only a few of whom have completed their studies and returned to take the state licensing examinations. A far-reaching effect will be accomplished by the recognition on the part of European educational authorities that this country is not at present satisfied with the medical education of Americans in Europe and that it expects a European authority to maintain the same standards for American students in reference to admission and graduation requirements now maintained in the best American and European schools qualifying for medical practice here and abroad. Now that the attention of the European authorities has been directed to this problem, there is every reason to believe that they will seek out a solution to the problem which will satisfy all concerned.

The problem of the licensure of medical students-trained in Europe must ultimately be considered, to a certain extent at least, in reference to the definite selection and limitation of the number of physicians trained for and licensed to practice medicine throughout the United States.

DISCUSSION

DR. W. H. G. LOGAN, Chicago: Dr. Conzett pointed out that the first dental school in the world was created some ninety years ago. Medical education began in the United States seventy-five years before, yet medicine did not come to a preliminary standard of high school education until 1910. Six years after that time, dentistry came to the same high school standard. At present there are thirty-eight dental schools in the United States, fourteen of them requiring two years of collegiate preliminary education and the remainder one year of collegiate preliminary education. There has been some discussion of the possible change in the trend of dental education over into that of medicine, but, with the exception of a single school aggressively in favor of the taking of dental education into that of medicine and requiring the medical

degree before the further training of dentistry, the remainder of the thirty-eight favor the continuation of the training of dentists as an independent profession; they also favor a more thorough understanding of the definite relation that exists between mouth health and general disease. I believe that standardization in dental education will be effected on the minimum standard now set up for medicine; namely, two years of collegiate training, with an ultimate four years of dental training. The best dental schools are carrying their senior students into a general hospital, that they may find patients who show the relation between oral and systemic disease. In addition, dental interns in the hospital and interns in oral surgery are being added. I am surprised that this body has not demanded that more than seventeen states in the United States should have an intern year before an examination is granted. Dental teachers and those governing this problem would not think that a dentist could be trained by precept and by observation. I ask that some influence be created to extend to the remainder of the forty-eight states. The dental men of this country feel that medicine should care for its own problems, and we as dentists wish to join you in that movement. We believe that thereby will the public be best served.

DR. HENRY M. FITZHUGH, Baltimore: I am in accord with the main points made by Dr. Platter, first, that it is the duty of the boards to select for license only men who are well qualified to take the resources of science and medicine to the public. I agree with his idea that it is no part of the duty of organized medicine to be fighting the cults. It probably is part of our duty to prosecute quacks. We find that it is difficult in Maryland to do much. The people are rather indifferent.

DR. J. GURNEY TAYLOR, Milwaukee: It seems that the discussion centers on what should be done with the cults. I think, with Dr. Fitzhugh, that it is wise for us to attend to our own knitting. The enforcement of the medical practice acts is before our boards at all times and has caused serious embarrassment. Up to a short time ago, Wisconsin had its investigator functioning under the medical board. He was transferred and put under the board of health, since which time much better results have been secured. In the last six months of 1932 there were eighty-nine cases tried, and eighty-two convictions, approximately 90 per cent, were secured.

DR. H. M. PLATTER, Columbus, Ohio: We instituted about 125 cases and had 100 convictions. We had about fifteen cases that were dismissed, so our proportion runs in line with yours, about 80 per cent.

DR. TAYLOR: The question of carefully supervising the licenses is a large order for the secretary of a medical board. With men scattered over the state it is hard to follow up the acts of those who are already licensed. There is one part of the law in Wisconsin that has worked out successfully: when a physician is convicted of a crime in the course of his professional work, the court submits its findings to the board, and the board has no chance to do anything except cancel his license.

DR. T. J. CROWE, Dallas, Texas: All violations?

DR. TAYLOR: No, criminal. In the minor types of misdemeanor, the board must institute its own civil procedure in the courts.

DR. CLAUDE A. BURRETT, New York: The problem is one of determining what shall be done with those of our people who cannot receive educational advantages in this country and go abroad. It is apparent that it is really not an educational problem so much as it is a problem of selection. The present problem of the foreign medical graduate in America is largely centered in New York City. It may be difficult for one not in the midst of New York life, and especially its educational life, to appreciate fully what the medical educational limitations in America have meant to the great number of young men and women in that city who desire a medical education. Our compulsory educational system is turning out thousands of graduates each year. Not only is secondary education compulsory, but higher education in the municipal colleges of New York City is free and great numbers of these students find their way into the city colleges, as well as the other colleges and universities. The result of it is that literally hundreds each year are seeking further training looking toward a life work. The average layman, especially if he is a father of one of these,

cannot see why his son or daughter should be turned away from further education in his chosen profession. Fundamentally, then, it is a problem of more adequate educational and vocational guidance and an elevation of the dignity of a wider range of human activities. It is clear that American students receive didactic training under difficult conditions, with little opportunity for clinical observation and no internship in European countries, owing to the fact that it is reserved for citizens of those countries. Since New York examinations are wholly written, I wonder whether these American students would not be able to pass the examination of the New York state board. I feel that the recommendation of Dr. Rypins, that in order to be admitted to the New York board examination one must be a licensed practitioner of the country in which he received his education, is a just one and reciprocal in the matter of distribution of physicians in the various countries. The problem of professional education in America rests on the opportunity that is given in this country for free education through the high schools, and in large cities such as New York and in many of the states for practically free higher education. Our professional schools and their administration are then embarrassed by our American system of free education. Contrary to this, in all the countries of Europe, education must be paid for directly by the individual above the grade schools of those countries. I feel, therefore, that the problem we have before us is more than the simple one of requirement for admission to our schools. It is even more than the question of what we shall do with those who may want to go to European countries. I think we must face directly the problem of our needs for physicians in this country and face it on that basis.

DR. WILLIAM S. LADD, New York: These provisions do not keep any qualified student from going abroad and studying and, if he can fulfil certain qualifications, transferring back to this country. There is provision made for special consideration of well qualified cases. The action, as I understand it, is to correct the abuses that seem to be coming along in the present situation. I am in accord with the regulations and the suggestions that the federation has made in regard to this regulation of foreign medical students.

DR. WALTER L. BIERING, Des Moines, Iowa: At this time there are changes going on in the French method of medical education. A committee has been appointed, of which Drs. Roussy and Rist are members. Several pamphlets have been published in which they propose changes in the present plan. They are endeavoring to approximate toward the American plan of education. Dr. Rist, who is in this country now, is to meet Drs. Rappleye and Rypins on Thursday and Friday of this week to consider these changes. Their purpose is to have restrictions that will keep out foreign students, except those who are very desirable. They have a great influx of students from Russia that they are anxious to keep out. They want to use these American regulations for that purpose.

DR. I. D. METZGER, Pittsburgh: The secondary schools in our country have brought up lists of applicants not only for medicine but for all other professions. During the last two weeks we had a meeting of the presidents of the boards of Pennsylvania. All these boards are facing the same situation which the medical board is facing; that is, of an unusually large number of candidates. Candidates up to 40 per cent have been flunked in the law examinations. They are deliberately making their examinations so difficult that scarcely one may pass. I am glad to know that medicine is not taking that course. It is not fair to encourage a person to study medicine until he has completed his course and then prevent him from practicing. We must somehow train students of secondary schools to understand that the professions do not hold up quite the bright outlook which they have been led to believe they do.

(To be continued)

The Ketogenic Diet and Epilepsy.—We may say that with the ketogenic diet alone, without special attention to water or mineral metabolism, one third of the cooperative intelligent epileptics can be made free from seizures. The best results are obtained in children and young adults who are just beginning to have seizures. Patients with frequent attacks of long duration respond less favorably.—Pulford, D. S.: The Present Status of the Ketogenic Diet, *Ann. Int. Med.* 6:797 (Dec.) 1932.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Personal.—Recent appointments to the Arkansas Board of Health include Drs. William G. Hodges, Malvern, Wells F. Smith, Little Rock, and Thomas Wilson, Wynne. All three were named for terms expiring in December, 1937.—Dr. Frank Vinsonhaler, dean, University of Arkansas School of Medicine, Little Rock, was recently awarded a medal by Columbia University, New York, for conspicuous service rendered to the university.

Dr. Grayson Appointed State Health Officer.—Dr. William B. Grayson, McGehee, was elected state health officer and secretary of the board of health, April 10. Dr. Grayson, whose appointment will be effective June 13, will replace Dr. Charles W. Garrison, who has served in the position eighteen years. Dr. Grayson was president of the Desha County Medical Society in 1931 and secretary of the society from 1927 to 1931. He is 36 years of age and a graduate of Tulane University of Louisiana School of Medicine, New Orleans.

CALIFORNIA

Health at San Diego.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended April 15, indicate that the highest mortality rate (18.4) appears for San Diego, and the rate for the group of cities as a whole, 11.1. The mortality rate for San Diego for the corresponding period of last year was 13.8, and for the group of cities, 12. The annual rate for eighty-five cities for the fifteen weeks of 1933 was 12.1, as against a rate of 12.6 for the corresponding period of last year.

Dr. Rosenau's Courses at the University.—Dr. Milton J. Rosenau, professor of preventive medicine and hygiene, Harvard University Medical School, Boston, will give two courses at the summer session of the University of California at Berkeley. One course will deal with elementary epidemiology, the evolution of methods of disease prevention and control based on studies of the history, prevalence, etiology, sources and modes of infection of the principal preventable diseases. The other course, elementary public health, will cover the field of public health in the United States, including a consideration of the causes of death, sickness and disability, the conservation of infant and child health, the home and the industrial environment, the noncommunicable diseases, and the presentation of health instruction.

Society News.—Dr. Arthur Dean Bevan, Chicago, addressed the Los Angeles Surgical Society, March 10, on peptic ulcer.—Dr. George F. McCleary, retired medical officer of the ministry of health of Great Britain, London, England, addressed the Los Angeles County Medical Association, March 1, on health insurance in Europe.—Karl F. Meyer, Ph.D., of the Hooper Foundation for Medical Research, University of California, San Francisco, addressed a joint meeting of the Hollywood Academy of Medicine and the Southern California Veterinary Medical Association, April 20, on "Diseases Akin to Man and Beast."—The Trudeau Society was addressed in Los Angeles, April 18, by Drs. Charles S. Young, Los Angeles, and John Dunlop, Pasadena, on "Arthrodesis of the Vertebrae for Tuberculous Disease" and "Operative Fixation of Tuberculosis of the Sacro-Iliac Joints," respectively.

DISTRICT OF COLUMBIA

Personal.—Dr. Joel T. Boone, captain, medical corps, U. S. Navy, March 31, terminated his assignment as physician at the White House, which covered a period of more than ten years. He has been assigned to the Naval Medical School at Washington. Later he is scheduled to be chief of medical service aboard the navy hospital ship *Relief*.—Dr. Charles W. Tegge, Washington, was awarded the Silver Star, February 8, for gallantry in action in the Meuse-Argonne, as a lieutenant in the twenty-third infantry, second U. S. Division.

A New Beaumont Society.—An undergraduate medical society has been organized at George Washington University School of Medicine, Washington, in honor of Dr. William Beaumont. One hundred years ago, March 6, 1833, Dr. Beaumont was given the honorary degree of doctor of medicine by

George Washington University. It is hoped that the society will encourage individual investigation among medical students. Meetings will be held twice a month, when papers will be presented by members on cases they have been studying or from research of medical literature.

Heart Association Extends Activities.—The Washington Heart Association has taken steps to extend its activities to include preventive measures against heart disease and social service work to patients with heart disease, according to the *Medical Annals* of the District of Columbia. The association has been composed of physicians interested mainly in the scientific study of heart disease. It is now planned to form a board of governors of twenty members, consisting of physicians and laymen. A full time secretary has also been engaged. The death rate from heart disease in Washington is greater than that in any other city in the United States, the report stated. Dr. James A. Lyon is president of the association; Dr. Lewis C. Ecker, vice president, and Dr. James W. Esler, secretary.

FLORIDA

Bills Introduced.—S. 203 proposes that, before any person is permitted to take an examination for a license to practice medicine, osteopathy, chiropractic or naturopathy, he possess a certificate from a state board of credentials, which this bill proposes to create. The certificate must show that (1) he is a person of good moral character, (2) that he has graduated from an accredited high school and (3) that he has in all other matters complied with the educational qualifications required by the practice act under which he seeks a license to practice the healing art. H. 18 proposes to repeal the law creating a board of optometry examiners and regulating the practice of optometry. H. 45 proposes to create a state spinal health research bureau in the state board of health and to create the office of state chiropractic supervisor who is to be charged with investigating and reporting to proper officials all violations of the chiropractic practice act. H. 170 proposes to define chiropody as "the diagnosis, medical, surgical, palliative, and mechanical treatment of ailments of the human foot or leg, except the amputation thereof; and shall include the use and prescription of local anesthetics." H. 215 proposes to authorize the sexual sterilization of certain socially inadequate residents of the state. H. 243 proposes to levy an annual occupational tax on physicians equal to 2 per cent of their gross incomes. H. 372 proposes to grant compensation and medical services to workmen who suffer personal injuries by accident arising out of or in the course of their employment or who contract diseases or infections as natural and unavoidable results from industrial injury. Workmen are not to be permitted to select their own physicians.

ILLINOIS

Bill Introduced.—H. 667 proposes to require every hospital to have on duty at all hours a person licensed to practice medicine in all its branches.

State Medical Meeting at Peoria, May 16-18.—The eighty-third annual meeting of the Illinois State Medical Society will be held in Peoria, May 16-18, with headquarters at the Pere Marquette Hotel, and under the presidency of Dr. John R. Neal, Springfield. Dr. Olin West, Secretary and General Manager, American Medical Association, among others, will address the secretaries' conference, Tuesday morning, on contract practice. Dr. Charles B. Wright, associate professor of medicine, University of Minnesota Medical School, Minneapolis, will deliver the oration in medicine, Tuesday afternoon. Dr. Harry S. Crossen, professor of clinical gynecology, Washington University School of Medicine, St. Louis, will give the oration in surgery, Wednesday morning, on "The Surgeon's Duty in Cancer of the Uterus." There will be symposiums on arthritis, heart disease and industrial hygiene. The following physicians will be included among the speakers:

Frank J. Jirka, director, state department of public health, Springfield, Outlook for Public Health.

Harry S. Gradle, Chicago, Etiology of Ocular Disease.

Harold Swanberg, Quincy, Value of Combined Cholecystography and Liver Function Tests.

Andy Hall, Mount Vernon, Cooperation Between the Health Department and the Local Physicians.

Hymen J. Burstein, Decatur, Pathology of the Urinary Bladder.

Frank Deneen, Bloomington, Fungus Infections of the Lung.

Arthur H. Parmelee, Oak Park, Importance of Roentgenologic Examination of Growing Bones.

Loyal Davis, Chicago, Roentgenology of Intracranial Tumors.

Maximilian J. Hubeny, Chicago, Insurance Aspect of Roentgenologic Cardiology.

Benjamin H. Orndoff, Chicago, Pneumoperitoneum and Surgery in Management of Abdominal Adhesions.

Howard L. Alt, Chicago, Primary Hypochromic Anemia.

Frank Garm Norbury, Jacksonville, Use of Sodium Amytal in Myoclonic Encephalitis.

Chicago

Banquet to Dr. McLean.—Because of his interest in Provident Hospital and in Negro medical education in general, the Cook County Physicians' Association sponsored a testimonial banquet, March 17, in honor of Dr. Franklin C. McLean, acting president of the Rosenwald Fund. Dr. Midian O. Bousfield was toastmaster. Speakers included Judge Albert B. George; Alderman R. R. Jackson; Dr. Nicholas Alfred G. Diggs, president of the physicians' association; Admiral Norman J. Blackwood, medical director of Provident Hospital; Mr. A. L. Jackson, president of the board of trustees of the hospital, and Dr. Paul C. Hodges, professor of roentgenology, University of Chicago. Following Dr. McLean's response, Dr. Carl G. Roberts presented him with an inscribed fountain pen desk set.

Health During the World's Fair.—Precautions are being planned by the Chicago Health Department for health of the visitors to the Century of Progress Exposition during the coming summer. Particular attention will be paid to water and sewage disposal, purity of food and milk, examination of employees, and adequate comfort stations and drinking fountains. The department will have complete control over all other health matters. The fair grounds will be under the same health supervision as the rest of the city. Tourist camping grounds within the city limits will also be under strict supervision, while outside camps will be under the control of state authorities. Tourist camps desiring the sponsorship of A Century of Progress must submit their plans for sanitary facilities and the control of communicable diseases to the health department for approval before any action will be taken by exposition officials. Food handlers have already been examined for communicable disease.

IOWA

State Medical Meeting at Des Moines, May 10-12.—The Iowa State Medical Society will hold its eighty-second annual session in Des Moines, May 10-12, with headquarters at the Hotel Fort Des Moines, and under the presidency of Dr. William W. Bowen, Fort Dodge. Out of state speakers will include the following physicians:

Della G. Drips, Rochester, Minn., Treatment of Functional Menstrual Irregularities in Young Women.
William C. Finnof, Denver, Tuberculosis in Ocular Disease.
William A. Plummer, Rochester, Diagnosis of Mild and Atypical Cases of Exophthalmic Goiter.
James A. Evans, La Crosse, Wis., Hyperinsulinism: Case Reports and Discussion of Medical and Surgical Treatment.

The address in surgery will be delivered, Wednesday, by Dr. Harry M. Richter, professor of surgery, Northwestern University College of Medicine, Chicago, on "Radical Gastric Surgery in Peptic Ulcer." Dr. David P. Barr, Busch professor of medicine, Washington University School of Medicine, St. Louis, will give the address in medicine, Thursday, on "The Functions of the Anterior Lobe of the Hypophysis." Other physicians on the program will include:

Frederick H. Lamb, Davenport, Agranulocytosis.
George M. Crabb, Mason City, Appendicitis: Its Increasing Mortality.
Clarence L. Heald, Sigourney, How Can the Present Mortality from Appendicitis Be Lowered?
Frederick W. Mulsow, Cedar Rapids, The Perforated Appendix.
William E. Ash, Council Bluffs, Malaria Therapy of Neurosyphilis Other Than Dementia Paralytica.
Harry W. Vinson, Ottumwa, Use and Abuse of Cesarean Section.
Albert A. Schultz, Fort Dodge, Leads in Diagnosis.
Allen C. Starry, Sioux City, Laboratory Technique and the Practice of Medicine.
John E. Brinkman, Waterloo, Ruptured Renal Aneurysm with Complete Recovery After Operation.
Guy T. McCauliff, Webster City, Rupture of Wounds Following Abdominal Operations.
James F. Taylor, Sioux City, Labor Complicated by Misplaced Placenta.
Thomas F. Thornton, Waterloo, Diagnosis and Management of the Toxic Thyroid.
Clarence W. Baldridge, Iowa City, Diagnosis of Hypothyroidism.
Royal A. Becker, Atlantic, Surgical Accidents.
Harold J. McCoy, Des Moines, Rational Viewpoint in Medical Practice.
John E. Rock, Davenport, Intra-Ocular Foreign Body: An Unusual Case Report.
Frank L. Secoy, Sioux City, Retinal Blastoma.
Henry I. McPherrin, Des Moines, Allergy.
Jack V. Treyner, Council Bluffs, Infections of the Zygomatic Fossa.
Ben G. Dyer, Ames, The Running Ear.
Dean M. Lierle, Iowa City, Histology of the Inner Ear.

Dr. Felix A. Hennessy, Calmar, will be the toastmaster at the annual banquet, Thursday evening, when Dr. Bowen will give the presidential address on "The Progress of Medicine." Dr. Charles B. Taylor, Ottumwa, president-elect, and B. J. Price, attorney, Fort Dodge, will also speak. Entertainment will include a smoker, card party and luncheons. The State Society of Iowa Medical Women will hold its thirty-sixth annual meeting, May 10. Dr. Drips will address the society, among others, on "Functional Disturbances of the Menopause."

KENTUCKY

Lectures on Obstetrics.—Dr. James R. McCord, professor of obstetrics and gynecology, Emory University School of Medicine, Atlanta, is conducting a series of seven courses on obstetrics in Kentucky. Dr. McCord lectured at the City Hospital, Louisville, April 3-7, and at Paducah, April 17-21.

Society News.—Dr. James R. McCord, Atlanta, addressed the Jefferson County Medical Society, March 20, on maternal mortality.—Drs. Fred W. Rankin and Edward H. Ray, Lexington, addressed the Harlan County Medical Society, Harlan, February 25, on "Diagnosis and Treatment of Cancer of the Rectum" and "Intra-Urethral Resection of the Prostate," respectively.—Dr. Irvin Abell, Louisville, made an address on diverticulitis before the Campbell-Kenton County Medical Society, Covington, February 16.—Dr. Arthur T. McCormack, Louisville, discussed "Future Prospects of Medicine in the United States" and Dr. Edward B. Willingham, Paducah, "Emergencies in Heart Disease" at the quarterly meeting of the Southwestern Kentucky Medical Association at Mayfield, February 14.—Drs. George W. Bushong, Tompkinsville, and Beverly Douglas, Nashville, Tenn., addressed the Third District Medical Society at Glasgow, February 15, on "The Whole Time Health Unit and the General Practitioner" and "Empyema in Children," respectively.—Dr. Daniel M. Griffith, Owensboro, addressed the Muhlenberg County Medical Society, Central City, February 15, on abscess of the lungs.—Dr. Philip F. Barbour, Louisville, addressed the Lincoln County Medical Society, Stanford, February 14, on rheumatic diseases in children.

MARYLAND

Gift of Books.—A collection of books pertaining to public health, assembled by the late Dr. John S. Fulton, first full time state health officer for Maryland, and executive officer of the state department of health for nearly thirty years, was recently presented to the department's library by Mrs. Fulton. There are more than a hundred volumes in the collection, in addition to pamphlets and charts.

Health Officers' Conference.—The fourteenth annual conference of the health officers and boards of health of Maryland will be held in Baltimore, May 5-6, under the auspices of the state board of health. The conference will bring together health officers, physicians, county commissioners and boards of health, mayors of cities, state, county and local superintendents of schools, public health nurses and others interested in public health activities.

MICHIGAN

Bills Introduced.—H. 474, to amend the osteopathic practice act, proposes (1) to dub osteopaths, physicians and surgeons of the osteopathic school of medicine; (2) to permit licensed osteopaths to practice medicine and perform surgery, without restriction; (3) to require applicants for licenses to be graduates of accredited high schools, to have successfully completed sixty hours of college work and to have graduated from osteopathic schools of medicine accredited by the board; (4) to authorize osteopaths to make and sign birth and death certificates, and (5) to require that osteopaths be permitted to practice in hospitals supported in whole or in part by public revenue. The requirement as to college work is not to apply to students now matriculated in any recognized college of osteopathy. S. 144 proposes to create a department of registration of professions, to assume the functions of the board of registration in medicine, board of osteopathic registration, board of pharmacy, board of registration in chiropody, board of dental examinations, board of registration of nurses, board of examiners in optometry, and other boards for the examination and licensing of various professions. S. 147, to amend the workmen's compensation act, proposes to grant compensation for certain enumerated occupational diseases.

MINNESOTA

Tuberculin Test for Teachers Compulsory.—All teachers in Minneapolis will be required to submit to the Mantoux tuberculin test before the opening of school in September, according to a recent ruling of the board of education. Arrangements will be made by the director of hygiene.

Society News.—Dr. Martin Nordland, Minneapolis, conducted a clinic on goiter before the Hennepin County Medical Society, April 26, and Dr. Owen H. Wangenstein, Minneapolis, spoke on "Recognition and Treatment of Bowel Obstruction." The society was addressed, April 12, by Drs. Arthur E. Smith and Virgil J. Schwartz, Minneapolis, on "Diagnostic Significance of Pupillary Changes" and "Bronchoscopic Problems in General Practice," respectively.

MISSISSIPPI

Scholarships Awarded.—Five scholarships for the study of medicine at Tulane University of Louisiana School of Medicine, New Orleans, available under the Commonwealth Fund's plan of cooperation with the Mississippi State Board of Health and the university, have been awarded. The scholarships provide \$100 a month for the students throughout the medical course on condition that they will return to Mississippi for their first three years' practice, serving in communities of not more than 5,000 population. When the five students selected begin the 1933-1934 term at Tulane this fall, Mississippi will have fifteen scholarship students in attendance.

Society News.—The Coahoma County Medical Club was recently reorganized with Drs. Thack G. Hughes, Clarksdale, as president; Carrie Z. Ballard, Dublin, vice president, and Vernon B. Harrison, Clarksdale, secretary.—Dr. Henry G. Rudner, Memphis, Tenn., addressed the East Mississippi Medical Society in Meridian, February 16, on "Symptoms of Colon Dysfunction—Diagnosis and Treatment."—The Homochitto Valley Medical Society recently heard Dr. Lucien S. Gaudet, Natchez, discuss "A Piece of Steel in the Lens of the Eye Removed by Magnet Through the Original Wound" and "Brain Tumor Operation." Dr. Felix J. Underwood, Jackson, also spoke on "The Present State of Public Health."

MISSOURI

Bill Passed.—H. 664 has passed the house and the senate, proposing to make it lawful for licensed physicians to prescribe intoxicating liquors in such quantities and with such frequency and dosage as in their judgment the needs of their patients may require.

Personal.—Dr. James Archer O'Reilly, St. Louis, has been appointed associate professor of orthopedics in the St. Louis University School of Medicine.—The state house of representatives adopted a resolution extending greetings to Dr. Josiah G. Moore, Mexico, on the occasion of his seventieth birthday, January 31; Dr. Moore is a member of the house.—Dr. William G. Patton has been appointed superintendent of St. Louis County Hospital, Clayton.—Dr. Mazyck P. Ravenel, Columbia, has recently been made an honorary member of the Royal Sanitary Institute of Great Britain.

State Medical Meeting at Kansas City, May 1-4.—The seventy-sixth annual meeting of the Missouri State Medical Association will be held at Kansas City, May 1-4, with headquarters at the President Hotel, and under the presidency of Dr. Joseph W. Love, Springfield. According to the preliminary program, guest speakers will include Drs. Charles A. Elliott, Chicago, on "Parenchymatous Hepatic Disease"; Arnold S. Jackson, Madison, Wis., "Diagnosis and Treatment of Diseases of the Thyroid Gland"; Peter C. Kronfeld, Chicago, "Development of the Tear-Searing Operation Up-to-Date," and John Gordon Wilson, Chicago, "Vertigo." Other papers will be presented by the following physicians:

- Willard Bartlett, Jr., St. Louis, Renal Complications of Gallbladder Disease.
- Marvin L. Bills, Kansas City, Interpretation of Pathological Reflexes.
- Frederick B. Campbell, Kansas City, Anorectal Infection: Its Relation to General Medicine.
- Oswald P. Falk, St. Louis, Treatment of Cardiac Episodes of Middle Life.
- Edward T. Gibson, Kansas City, Narcolepsy.
- A. Morris Ginsberg, Kansas City, Gastric Symptoms of Acute Heart Diseases.
- Joseph E. Glenn and Cyrus E. Burford, St. Louis, Management of Bladder Diverticula.
- Thomas B. Hall, Jr., Kansas City, Enlarging Conceptions of Mycotic Infections of the Skin.
- Arthur E. Hertzler, Kansas City, Diseases of the Breast.
- Ellery M. Hetherington, Kansas City, Operation for Retroversion of the Uterus and Varicosities of the Broad Ligaments.
- Claude J. Hunt, Kansas City, The Bleeding Duodenal Ulcer.
- William H. Olmsted, St. Louis, Arteriosclerosis of the Lower Extremities with Special Reference to Treatment of Diabetic Gangrene.
- Carl J. Reis, St. Louis, Increasing Significance of Allergy.
- Ernest Kip Robinson, Kansas City, Radium in Gynecology.
- Joseph Hoy Sanford, St. Louis, Transurethral Prostatectomy: Indications and Limitations.
- Daniel L. Sexton, St. Louis, Headaches Associated with Endocrine Disorders.
- George H. Thiele, Jr., Kansas City, Symptomatology and Diagnosis of Anorectal Diseases.
- August A. Werner, St. Louis, Effect of the Thyroid, the Pituitary and the Gonads on Preadult Development.
- Paul V. Woolley, Kansas City, Simplicity in the Treatment of Anorectal Diseases.

In addition to these papers, there will be symposiums on diseases of the liver; gastro-intestinal diseases; diseases of the heart; tuberculosis, and diseases of the eye, ear, nose and throat.

NEBRASKA

District Meeting.—The spring meeting of the Third Council District of the Nebraska State Medical Association was held in Beatrice, April 13. A symposium on "Benign and Malignant Lesions of the Cervix and Uterus" was presented by Drs. Harold P. Kuhn, Ferdinand C. Helwig and Edward H. Skinner, Kansas City, Mo. Drs. Edwin Davis and William P. Wherry, Omaha, presented papers on "Prostatectomy and Prostatic Resection" and "Chronic Paranasal Sinus Pathology," respectively. Drs. Adolph Sachs and Benjamin Carl Russum, Omaha, conducted a heart clinic in the evening.

NEW JERSEY

Society News.—Dr. Temple S. Fay, Philadelphia, addressed the Mercer County Medical Society, Mercer, February 8, on "Critical States of Stupor, Coma and Convulsions."—Dr. Douglas Quick, New York, addressed the Morris County Medical Society at New Jersey State Hospital, Greystone Park, February 16, on "Radiation in Cancer."—Dr. Josephine B. Neal, New York, addressed the Union County Medical Society, Summit, February 8, on anterior poliomyelitis. A special meeting of the society was held, February 15, to consider the report of the Committee on the Costs of Medical Care, with Drs. Henry O. Reik, Atlantic City, and James B. Morrison, Newark, secretary of the Medical Society of New Jersey, as speakers.—The maternal welfare committee of the Medical Society of New Jersey reported recently that all counties but three in the state have organized maternal welfare commissions since the committee was established in 1931. Dr. Arthur W. Bingham, East Orange, is chairman of the committee.—Mr. Murray Jenkins, general counsel, United States Fidelity and Guarantee Company, addressed the Essex County Medical Society, Newark, March 23, on "Legal Problems Connected with the Practice of Medicine."—Dr. Earl B. Craig, Philadelphia, addressed the Cape May County Medical Society at its annual dinner, March 14, in Ocean City, on cancer, and Dr. Henry O. Reik, Atlantic City, discussed medical economics.

NEW YORK

New Activities in Westchester County.—The Medical Society of the County of Westchester has recently opened executive offices in White Plains, with James E. Bryan as executive secretary. Publication of the *Westchester Medical Bulletin* was begun in April, with Dr. Henry T. Kelly as editor and Mr. Bryan as business manager. Mr. Bryan is the son of Dr. Joseph H. Bryan, Asbury Park, N. J. Dr. Nellis B. Foster, New York, addressed the society, April 18, on "Problems in the Diagnosis of Diseases of the Liver." Drs. Charles Geschickter, Baltimore, and George T. Pack, New York, spoke, March 21, on "Clinical Aspects of Cancer of the Breast" and "Radiation Therapy of Breast Cancer," respectively.

Society News.—Dr. Charles Gordon Heyd, New York, addressed the Medical Society of the County of Albany, February 15, on "The Changing Order in Medical Affairs." Speakers at the meeting, March 15, were Drs. Frederick C. Conway and Arthur W. Wright, on hypertension, and Joseph L. Holohan, electrocoagulation of the tonsils.—Dr. Morris Rosenthal, New York, addressed the Dutchess-Putnam Medical Society, Poughkeepsie, February 8, on "Compensation Agreement" and Dr. Irving D. Steinhardt of the New York Physicians' Mutual Aid Association, "United to Help Each Other."—Drs. Herman E. Pearse, Jr., Rochester, and MacNaughton Willinson, Rochester, addressed the Livingston County Medical Society, Dansville, in January, on "Neoplasms: Their Diagnosis and Treatment" and "Use of Sodium Amytal in Obstetrics," respectively.—The New York State Association of Public Health Laboratories held its annual meeting at the Ellis Hospital, Schenectady, April 26.—Dr. Lawrason Brown was reelected president of the Saranac Lake Society for the Control of Tuberculosis at the annual meeting, March 1.

New York City

Personal.—John Culbert Faries, director of the Institute for the Crippled and Disabled since 1919, has resigned on account of poor health.

Medal Awarded to Professor Sherman.—The medal of the American Institute of Chemists awarded annually for outstanding service to chemistry will be presented to Henry C. Sherman, Ph.D., executive officer of the department of chemistry, Columbia University, at the annual meeting of the institute in May in New York. The award is made in recognition of Dr. Sherman's research on food and his service in the training of chemists. He received his advanced degrees at

Columbia and has been teaching in the university since 1898. His most recent research has been concerned with the effect of diet on longevity, carried out in collaboration with the Carnegie Institution of Washington. For fifteen years he has been associated with the food supply committee of the New York Association for Improving the Condition of the Poor and is chairman of the committee on nutritional problems of the American Public Health Association.

Society News.—At the meeting of the Medical Society of the County of New York, March 27, a symposium on the "Acute Abdomen" was presented by Drs. John F. Erdmann, Frederic W. Bancroft and Charles E. Farr.—Drs. Benjamin V. Derrah and Chester L. Davidson addressed a joint meeting of the Queensboro Surgical Society and the Medical Society of the County of Queens, March 28, on "Value of a Complete Urological Examination in Upper Urinary Tract Pathology" and "Acute Gangrenous Appendicitis with Spreading Peritonitis," respectively.—A symposium on cutaneous cancer was presented at the meeting of the International and Spanish-Speaking Association of Physicians, Dentists and Pharmacists, March 17, by Drs. George Miller MacKee, Douglas Quick, J. Frank Fraser, Ralph N. Tripp and Jacob Wachtel.—Dr. Bradley L. Coley addressed the New York Surgical Society, April 26, on "Solitary Bone Cyst—the Localized Form of Osteitis Fibrosa Cystica."—A symposium on pelvic measurements was presented at a meeting of the Medical Association of the Greater City of New York, April 17, by Drs. Herbert Thoms, New Haven, Conn.; Henry J. Walton, Baltimore, and William E. Caldwell. Dr. Burrill B. Crohn addressed the association, March 20, on abdominal pain and a symposium on the "acute abdomen" was presented by Drs. Robert F. Barber, Frank Bethel Cross and Alfred L. Loomis Bell.—Dr. Ralph H. Boots delivered the seventeenth afternoon lecture of the New York Academy of Medicine, March 17, on chronic arthritis, and Dr. Marcus A. Rothschild, the eighteenth, March 24, on heart disease.

OHIO

Personal.—Dr. Eldred V. Thiehoff is acting director of the Cleveland Child Health Association in the absence of Dr. Richard A. Bolt, who is to spend a year in Germany.—Dr. Henry E. Beebe, Sidney, recently celebrated the sixtieth anniversary of his entrance into medical practice. He is 84 years old.—Dr. Merrill F. Steele, Fort Wayne, Ind., has been appointed superintendent of Grant Hospital, Columbus.

Society News.—Drs. Karl D. Figley and Howard J. Parkhurst, Toledo, among others, addressed the Cleveland Allergy Society, March 28, on "Silk Sensitivity, with Special Reference to Atopic Eczema."—Dr. Albert D. Ruedemann, among others, discussed "Extra-Ocular Muscle Imbalance and Its Associated Head Pains" at a meeting of the Cleveland Neurological Society, April 19.—Dr. Albert C. Furstenberg, Ann Arbor, Mich., addressed the ophthalmologic and otolaryngologic section of the Cleveland Academy of Medicine, April 28, at a meeting open to all members of the academy, on osteomyelitis of the skull.—Dr. Russell L. Haden, Cleveland, was the guest speaker at a joint meeting of the Cincinnati Academy of Medicine with the Cincinnati Dental Society, April 10, on "Dental Infection and Systemic Disease." A symposium on poliomyelitis was presented, April 24, by Drs. Merlin L. Cooper, who discussed etiology; Frank E. Stevenson, symptomatology, and John W. McCammon, orthopedic care.—Dr. James M. Pierce addressed the Cincinnati Obstetrical Society, April 13, on "Treatment of Acute Pelvic Inflammation."—At a meeting of the Logan County Medical Society in Bellefontaine, April 7, Dr. Harold Swanberg, Quincy, Ill., spoke on "Present Status of Radium Therapy."

PENNSYLVANIA

Anniversary Volume of County Society.—The Cambria County Medical Society has issued a special volume commemorating its eightieth anniversary, which was observed at a meeting, Dec. 15, 1932, at the Hender Hotel, Johnstown. The historical volume bears the name of the society's bulletin, "The Medical Comment." Early records of the society were destroyed in the Johnstown flood of 1889, but the editors have assembled the early history as fully as possible from other sources. Beginning with the first meeting after the flood, June 10, 1889, the minutes of the society up to the first publication of *Medical Comment* in 1917 are printed for the first time. A section is devoted to photographs and biographies and the final section to the minutes of the women's auxiliary, organized in 1925. Drs. George Hay and Joseph J. Meyer, Johnstown, collected the historical material and edited the 350 page volume.

Philadelphia

Appointments at Temple.—Recent appointments to the staff of Temple University School of Medicine include: Drs. Barton R. Young and Wilbur P. Bailey, assistants in radiology; Samuel Lawrence Woodhouse, Jr., Frank M. Dyson and Francis C. Hartung, clinical assistants in medicine; Chester Reynolds and Frank J. Noonan, clinical assistants in obstetrics and rhinology, respectively; Louis Alexander Soloff, assistant in clinical pathology; Gerald H. J. Pearson, lecturer in pediatrics, and Bradford Green, instructor in obstetrics.

Annual Cancer Course.—The Philadelphia County Medical Society presented its second annual cancer course, April 11-14, with demonstrations at various hospitals and evening meetings and scientific exhibit at the society's building. Hospitals participating were Hahnemann, Jefferson, Graduate, American Oncologic, Philadelphia General, Jeanes, Jewish and Lankenau. Sessions were also held at Temple University Medical School, University of Pennsylvania School of Medicine and Woman's Medical College of Pennsylvania. Addresses at the evening sessions were as follows:

Dr. Joseph McFarland, Factors Constituting Malignancy in Tumors.
Dr. Jonathan M. Wainwright, Scranton, What Has Been Done and What Can Be Done in Cancer Control.
Dr. William H. Woglom, New York, Recent Investigations on Resistance to Transplantable Tumors.
Dr. Warren H. Lewis, Baltimore, Cancer Cells, with motion pictures.

The last evening was devoted to a symposium on recognition and treatment of early lesions and early diagnosis, presented by Drs. Carroll S. Wright, George M. Dorrance, John B. Carnett, Chevalier Jackson, Louis H. Clerf, Henry L. Bockus, Damon B. Pfeiffer, Leon Herman and Catharine Macfarlane.

Society News.—Members of obstetric societies of New York, Philadelphia and Boston held a joint meeting in Philadelphia, April 6, during which clinics were held in various hospitals.—Dr. Vincent D. Vermooten, New Haven, Conn., addressed the Philadelphia Urological Society, March 27, on "Underlying Causes of Ureteral Dilatation and Hydronephrosis Following Transplantation of the Lower End of the Ureter" and Drs. David M. Sidlick, Harold S. Rambo and Abram Strauss, "Treatment of Visceral Syphilis with Acetylarsan."—Drs. Joseph T. Beardwood, Jr., and Donald M. Pillsbury addressed the Academy of Stomatology of Philadelphia, March 28, on "The Role of Dentistry in the Management of Diabetes Mellitus" and "What the Dentist Should Know About Syphilis," respectively.—The program of the Philadelphia County Medical Society, April 26, was presented by Drs. Frederic H. Leavitt, who spoke on "Mental Disease, the Modern Plague"; Frederick William Sunderman, "The Bearing of Recent Studies on the Prevention of Diabetic Coma," and Michael G. Wohl, "A Typical Hyperthyroidism and the Significance of the Basal Metabolic Rate."

RHODE ISLAND

Low Records for Contagious Diseases.—A survey of five contagious diseases in Rhode Island during the period 1928-1932 revealed that death rates for typhoid, diphtheria and scarlet fever were the lowest in the history of the state. The mortality rates for measles and whooping cough also declined in the five-year period, though both diseases reached record-breaking peaks of morbidity in 1932. The survey showed an average of forty-seven cases with six deaths a year for typhoid. Diphtheria declined from 641 cases in 1928 to 260 in 1932, an improvement held to be the result of state-wide immunization. Scarlet fever averaged 1,431 cases, with fourteen deaths a year. For measles the average was 4,925 cases a year, with 34 deaths, and for whooping cough it was 592 cases, with 33 deaths. In 1932 there were 11,330 cases of measles and 975 of whooping cough.

SOUTH CAROLINA

Bill Introduced.—H. 1010 proposes to require hospitals treating members of both the white and Negro races to employ nurses of both races and to prohibit hospitals from allowing a white nurse to render any service to any Negro patient other than to take temperature and to dress incisions in cases of surgical operations.

SOUTH DAKOTA

Dr. Tarbell Honored.—The Watertown District Medical Society had as a guest of honor at its meeting, March 14, Dr. Hervey A. Tarbell, celebrating his fiftieth anniversary in the practice of medicine. Dr. Tarbell received a silver vase bearing his name and the dates of his practice, 1883-1933. Dr. Chester A. Stewart, Minneapolis, made an address on tuberculosis and Dr. August E. Bostrom, De Smet, described the recent typhoid epidemic at Chamberlain.

TENNESSEE

State Medical Election.—Dr. Hiram B. Everett, Memphis, was elected president of the Tennessee State Medical Association at the annual meeting in Nashville, April 13, succeeding Dr. William P. Wood, Knoxville. Vice presidents elected were Drs. Kyle C. Copenhaver, Knoxville; William S. Rude, Ridgetop, and George G. Mulherin, Brownsville. Dr. Harrison H. Shoulders, Nashville, was reelected secretary-editor.

Society News.—Dr. John C. Burch addressed the Nashville Academy of Medicine, March 28, on "Treatment of Functional Uterine Bleeding."—Dr. Cecil B. Tucker addressed the Knox County Medical Society, Knoxville, March 14, on "Eastern Type of Rocky Mountain Spotted Fever."—Dr. Daniel R. Thomas, Calderwood, addressed the Blount County Medical Society, April 6, on "Use and Abuse of Nerve Sedatives."—At a meeting of the Chattanooga and Hamilton County Medical Society, April 6, Dr. Henry H. Hampton discussed tumors of the breast.—Dr. Edward M. Fleenor, Johnson City, addressed the Washington County Medical Society, April 6, on angina pectoris.

TEXAS

State Medical Meeting at Fort Worth, May 8-11.—The sixty-seventh annual session of the State Medical Association of Texas will be held in Fort Worth, May 8-11, with headquarters at the Texas Hotel. At the opening general session Dr. John H. Foster, Houston, will deliver the presidential address; Caleb Perry Patterson, Ph.D., chairman of the department of government, University of Texas, Austin, will speak on "Three Roads to Collectivism" and Henry F. Vaughan, Dr.P.H., Detroit, "Medical Participation in Public Health Work." At other general sessions speakers will be:

Dr. Edward H. Cary, Dallas, President, American Medical Association, "Is the American Medical Association Essential to the Welfare of the Public?"

Dr. Isidore Cohn, New Orleans, Personal Experiences in Gastric Surgery.

Dr. Irving W. Potter, Buffalo, Technic of Elective Version.

Dr. Albert C. Broders, Rochester, Minn., Retention and Elaboration of Some Practical Observations and Deductions on Pathology of the Living.

Dr. Frederick A. Willius, Rochester, Minn., Treatment of Congestive Heart Failure.

Dr. Walter L. Treadway, Washington, D. C., The Drug Addiction Situation.

In addition, Dr. Cohn will recount "Personal Experiences in Fractures" as guest of the section on surgery; Dr. Potter will address the section on gynecology and obstetrics on "Abdominal Cesarean Section"; Dr. Willius, the section on medicine and diseases of children, on "Adiposity of the Heart"; Dr. Broders, the section on surgery, on "Grading of Cancer: Its Relationship to Metastasis and Prognosis"; Dr. Vaughan, the section on public health, on "Immunization and Diphtheria Control," and Dr. William A. Wagner, New Orleans, the section on eye, ear, nose and throat, "Histopathology of Nonspecific Sinusitis." The president's reception and ball will be held at the Texas Hotel Tuesday evening, May 9. Golf tournaments will be arranged at the Rivercrest Country Club. The Texas Dermatological Society, the Texas Neurological Society, the Texas Radiological Society and the Texas Railway Surgeons Association will hold their annual meetings, and a conference of county and city health officers will be held, May 8.

WISCONSIN

Bill Introduced.—A. 817 proposes that if a child is so advanced in intra-uterine age that if delivered, it might live after separation from its mother and grow into the ordinary activities of life, a right of action shall exist in its favor for any injury wantonly or negligently inflicted on its person at that intra-uterine age or in favor of its personal representative in the case of its death from any such injury.

Increase in Heart Disease.—Provisional mortality figures for 1932 show that deaths from heart disease in Wisconsin gave a death rate of 218.5 per hundred thousand of population, in comparison with a rate of 202.9 for 1931. The rate is said to be the highest ever recorded by the state health department. A marked increase in influenza also occurred, 28.6 for 1932 in comparison with 18.7 for 1931. Tuberculosis, on the other hand, showed a decline from 48.7 in 1931 to 45.1 for 1932. The infant mortality rate was estimated provisionally at about 46 per thousand live births, as compared with 52.9 in 1931. The death rate from diarrhea and enteritis under 2 years of age was 6.9, the lowest ever reported. Incomplete reports of deaths amounted to 30,046 and of births, about 53,000.

Society News.—Drs. Solomon Strouse, Chicago, and Edmund H. Mensing addressed the Milwaukee County Medical

Society, March 10, on "The Clinical Laboratory in Relation to the Clinic" and "Peritonitis—The Pathologic Physiology Involved in Its Treatment," respectively.—Dr. Sanford R. Gifford, Chicago, addressed the Milwaukee Academy of Medicine, March 21, on "Ocular Findings in General Diseases." Drs. Herman L. Kretschmer, Chicago, and Arthur A. Schaefer addressed the academy, February 21, on "Transurethral Resection of Bladder-Neck Obstruction" and "Inheritance and Significance of Blood Groups," respectively.—Dr. Pol N. Coryllos, New York, addressed the University of Wisconsin Medical Society, March 13, on "The Bronchial Obstruction Syndrome in Pulmonary Diseases."—Drs. Stanley J. Seeger, Milwaukee, and Patrick R. Minahan, Green Bay, addressed the Brown-Kewaunee County Medical Society, February 21, on carcinoma and medical economics, respectively.—Dr. Joseph Brennemann, Chicago, addressed the Racine County Medical Society, Racine, February 16, on "Treatment of Empyema in Children" and Dr. Eugene T. McNery, Chicago, and John A. Bigler, Highland Park, Ill., "Diagnosis of Tuberculosis in Children by X-Rays."—Dr. Frank Smithies, Chicago, discussed "Diseases of the Stomach and Gallbladder" at a meeting of the Fond du Lac County Medical Society, Fond du Lac, March 8.

GENERAL

Impostor Impersonates Physician.—Dr. Sanders Lewis Christian, medical officer in charge, U. S. Marine Hospital, Norfolk, Va., has reported that a swindler has recently impersonated him, cashing checks in his name. No description of the man was available except that he was said to be elderly and somewhat pompous. He was reported to be in El Paso, Texas, about the middle of March, where he registered at the Hussmann Hotel and joined the El Paso Club.

Training for Teachers of the Near-Blind.—Special training for teachers of children with seriously defective eyesight will be offered during this summer at Western Reserve University, Cleveland, University of Chicago, and Teachers College, Columbia University, New York, the National Society for the Prevention of Blindness announces. "Sight-saving" classes are now a part of the educational system in 119 communities in the United States. Further information may be obtained from the society, 450 Seventh Avenue, New York.

Epidemiologic Numbers.—The *American Journal of Hygiene* announces that henceforth it will publish two epidemiologic numbers each year, in May and November. This action is taken in order to fill a need caused by the discontinuance of the *Journal of Preventive Medicine* with the last issue of 1932. Edwin O. Jordan, Ph.D., professor of hygiene and bacteriology at the University of Chicago, who was editor of the *Journal of Preventive Medicine*, will be associate editor for the epidemiologic numbers of the *American Journal of Hygiene*.

Mothers' Day and Maternal Mortality.—In its third annual Mothers' Day campaign, the Maternity Center Association is directing attention this year to the need for improved maternity care. With this objective, medical societies, women's clubs and welfare organizations will cooperate in the observance of Mothers' Day, May 14. The association states that recent statistics indicate a slight improvement in maternal mortality. Material for local campaigns will be provided without charge by the Maternity Center Association, 1 East Fifty-Seventh Street, New York.

International Organization on Heart Disease.—At a meeting of the Educational Committee for Study and Combat of Heart Disease in Würzburg, Germany, March 7, which was attended by both German and foreign cardiologists, an international committee for study and combat of heart disease (Internationale Komitee zur Erforschung und Bekämpfung der Herzkrankheiten) was formed. The purpose of the international committee is to promote uniformity in nomenclature and cooperation in the study of the natural history of heart disease. The Heart Committee of the New York Tuberculosis and Health Association, of which Dr. Ernst P. Boas is chairman, was offered the leadership in the undertaking. The first meeting will be held in 1934, probably in Germany.

Tuberculosis Scholarships.—Two competitive scholarships for study at the Benito Mussolini Institute at Rome have been placed at the disposal of the International Union Against Tuberculosis by the Italian Fascist National Federation Against Tuberculosis. They provide for a stay of eight months for young physicians who wish to improve their knowledge of the disease. The work undertaken will be subject to agreement between the director of the institute and the candidate. The scholarships will be awarded by the executive committee at a meeting in July. Names of candidates, with a record of their

qualifications, age and professional experience should be sent to the secretariat of the International Union Against Tuberculosis, 66 Boulevard St.-Michel, Paris, not later than July 1.

Society News.—The sixteenth annual meeting of the American Association for Thoracic Surgery will be held in Washington, D. C., May 9-11, with headquarters at the Willard Hotel, and under the presidency of Dr. George P. Muller, Philadelphia. The preliminary program includes the following speakers: Drs. Richard H. Overholt, Boston, "Selective Surgical Collapse for Lung Abscess"; Howard L. Beye, Iowa City, "Operative Mortality from Thoracoplasty in Pulmonary Tuberculosis—Study of Six Cases"; Jay Arthur Myers, Minneapolis, "Collapse Therapy and the Ambulatory Patient"; Louis H. Clerf, Philadelphia, "Carcinoma of the Bronchus"; Julian A. Moore, Asheville, N. C., "Closed Intrapleural Pneumolysis: A Critical Review," and Maurice M. Berck, New York, "Surgical Significance of Some Aspects of the Gross Pathology of Pulmonary Tuberculosis."

Impostor Arrested for Worthless Checks.—*California and Western Medicine* recently reported that George Stanley Paris, who has posed as a physician in several states, had been arrested in Los Angeles on a charge of passing worthless checks in Oakland. Paris's activities were described in *THE JOURNAL*, Sept. 3, 1932, page 841, after he had attempted to swindle physicians and hospitals in Bristol, Tenn., and in New York City. Records of the California State Board of Medical Examiners show that Paris, who uses such variations of his name as George I. Paris, George Samuel Isaacman and Samuel Paris, has served prison sentences in California and Missouri. At different times he has claimed graduation from Stanford University and the University of Illinois. In New York he said that he had served internships in two hospitals in Hollywood, Calif., and that he was licensed to practice medicine in California. He did serve as an intern at Windsor Hospital, Glendale, Calif., which is not an accredited hospital, according to records of the California state board. No record has been found to show that the man ever attended a medical school or received a license to practice medicine.

National Academy of Sciences.—The National Academy of Sciences held its annual meeting in Washington, D. C., April 24-26. Among speakers who discussed medical subjects were:

- Dr. Walter B. Cannon, Boston, Recent Studies on Chemical Mediation of Nerve Impulses.
- Dr. Harvey Cushing, Boston, Basophilic Activation of the Hypophysis and Its Bearing on Certain Diseases.
- Dr. Charles R. Stockard, New York, Gene Constitution and Endocrine Quality in Determining Growth Reactions.
- Willbur W. Swingle, Ph.D., Princeton, N. J., Studies on the Function of the Adrenal Cortical Hormone and the Cause of Death from Adrenal Insufficiency in Dogs.
- Dr. Florence R. Sabin and Kenneth C. Smithburn, New York, Cellular Reactions to Lipoids from Acid-Fast Organisms.
- John R. Murlin, Ph.D., Rochester, N. Y., Gluconeogenesis from Fat.
- Carl Voegtlin, Ph.D., Herbert Kahler and Richard H. Fitch, U. S. Public Health Service, Action of the Parenteral Administration of Sugars on the Hydrogen Ion Concentration of Normal and Malignant Tissue in Living Animals.
- Dr. Herbert M. Evans, Berkeley, Calif., The Anterior Hypophyseal Substance Which Synergizes with Prolan.
- Elmer V. McCollum, Sc.D., H. D. Kruse, Sc.D., and Elsa R. Orent, Sc.D., Baltimore, Effects of Deprivation of Magnesium in the Animal Body.

Association for the Study of Goiter.—The preliminary program of the annual meeting of the American Association for the Study of Goiter at Memphis, May 15-17, has been announced. Headquarters will be at the Peabody Hotel. Dr. Henry S. Plummer, Rochester, Minn., will give the presidential address. The scientific program will include the following physicians as speakers:

- George E. Beilby, Albany, N. Y., Exophthalmic Goiter in Children.
- Willard O. Thompson, Chicago, Iodine in the Thyroid Gland.
- C. Alexander Helliwig, Wichita, Kan., Morphogeographic and Experimental Studies on the Etiology of Goiter.
- Harold L. Foss, Danville, Pa., When Is a Goiter Toxic?
- John deJ. Pemberton and John M. McCaughan, Rochester, Minn., Hemiplasia of the Thyroid Gland.
- William Weston, Columbia, S. C., Studies in the Prevention of Goiter.
- Charles H. Mayo, Rochester, Minn., Thyroid Deficiency: A Commonly Unrecognized Disorder.
- Richard B. Cattell, Boston, Diseases of the Thyroid in Children.
- Willard Bartlett, St. Louis, Rehabilitation of the Toxic Patient Viewed in a New Light.
- Frederick A. Collier and Walter G. Maddock, Ann Arbor, Mich., Water Balance of Patients with Hyperthyroidism.
- Arthur E. Hertzler, Halstead, Kan., Indications and Technic for Complete Thyroidectomies.
- Charles H. Frazier, Philadelphia, Carbohydrate Metabolism in Its Relation to Hyperthyroidism: A Continuation Study.
- Benjamin Markowitz, Bloomington, Ill., Life Cycle of the Thyroid Cell and Its Relation to Goiter.
- Martin Nordland, Minneapolis, Advantages and Technic of Preliminary Hemostasis in Thyroidectomy.
- James A. Lehman, Philadelphia, Hyperthyroidism Complicating Pregnancy.
- Shelby W. Wishart, Evansville, Ind., Use of Digitalis Preparations in Thyrotoxicosis.

Andre Crotti, Columbus, Ohio, Thyrotoxic Goiter Problem and the Autonomic.
Henry H. Searis and Wallace I. Terry, San Francisco, Further Observations on Parathyroid Protection.

Other speakers on the program whose subjects have not been announced include Drs. George W. Crile, Cleveland; Donald Guthrie, Sayre, Pa.; Emil Goetsch, Brooklyn; James A. Hill, Houston, Texas; Samuel J. Waterworth, Clearfield, Pa., and Ambrose G. McGhie, Hamilton, Ont. In addition, there will be clinics.

Government Services

The Lowest Army Venereal Disease Record

The lowest admission rate for venereal disease in the history of the U. S. Army, 45.6 per thousand, is announced in the recent annual report of the Surgeon General which covers the general activities of the medical department for the fiscal year ended June 30, 1932. The admission rate for venereal disease in the army in 1901 was 150. The surgeon general points out that automobiles again caused the greatest mortality, accounting for ninety-two deaths, an increase of 28 per cent over 1930 and 100 per cent over 1929. In a large number of the cases, faulty driving was said to be clearly the cause of the fatality. During the calendar year 1931, there were 623 deaths among officers and enlisted men of the army as compared with 533 in 1930, giving the highest death rate since 1920; 334 of these deaths were from disease and 289 from external causes. There were increases over the preceding year of fifteen deaths from tuberculosis; twenty-two from cardiovascular-renal disease; eight from suicides and homicides; twenty-five from railroad and automobile accidents; seventeen from airplane accidents and seventeen from pneumonia. Only one death due to malaria occurred among 868 cases in the entire army. A survey of the leading causes of death during a twenty year period, excluding the four abnormal years 1917-1920 and ending with 1929, shows that suicide was the leading cause in sixteen of the twenty years and tuberculosis in the other four. The admission rate to sick report was 655 for all causes as compared with 608 per thousand men in 1930. Respiratory diseases are of increasing importance as causes of admission. Fifty-three officers and 1,985 enlisted men were discharged from the service for disability. Diseases of the nervous system are the most important causes of discharge. During 1931, there were 1,608,143 days lost from duty on account of sickness and injury, an increase of 61,357 days over 1930. Of this time lost, 1,299,606 days were lost on account of diseases and 308,537 on account of injuries produced by external causes. Gonorrhea was the leading cause of loss of time with 43.1 days per case, and 3,566 cases. Notwithstanding the low rate, venereal diseases were responsible for 6,171 admissions and 245,007 days lost. Tuberculosis with only 316 cases was second, with an average of 327.7 days per case. There were thirty-nine deaths due to airplanes and balloons during the year, an increase of 17 over 1930, but twelve less than in 1929. The daily average number of patients hospitalized was 6,783. In addition, there were 989,708 outpatients treated with an average of a little less than two treatments per patient. There were 286,770 physical examinations made and 197,839 vaccinations administered. Of the 6,783 hospital patients, 58.3 per cent were army personnel and 28.8 per cent were beneficiaries of the Veterans' Administration. The cost per patient day in the general hospitals of the United States, including the station hospital, Fort Sam Houston, Texas, and exclusive of new construction, was \$5.03, a decrease of 4 cents a day. Nine new station hospitals were opened during the year and one, Fort Eustis, Va., was closed. At present there are not enough medical officers to carry on the professional work of the army as desired. The enlisted strength of the medical department on June 30, 1932, was 6,528. The authorized allowance of 5 per cent of the total strength of the regular army in time of peace is entirely too small and should be increased to 7 per cent. At the present time there is practically no personnel for assignment to medical department field units, and posts and stations throughout the army have detachments that are inadequate. The increase in the total strength of the reserve corps was the largest since 1927. In the reserve officers' training corps units, the total enrolment during the year was 4,566, of which number 3,276 are in the medical units. Surgeon General Patterson emphasizes that the efficiency of the medical department is hampered by inadequate personnel. A comprehensive bill, representing the principal requirements of the medical department, will be recommended for introduction to Congress as soon as the national finances indicate that it may be given the consideration it merits.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 1, 1933.

The Size of the Modern Englishman

In the *Journal of the Royal Army Medical Corps*, Major M. J. Williamson has used the records of the gymnasium of the Royal Military Academy, which give the physical measurements of all the cadets who have passed through since 1865, to show any change in the last sixty years. For purposes of comparison, the records of sixty cadets were taken from the roll of 1870 and onward as they came. At the time of leaving, their average age was just under 20, their average height 5 feet 8 $\frac{1}{10}$ inches (173 cm.), and their average weight 10 stone 2 $\frac{1}{2}$ pounds (142 $\frac{1}{2}$ pounds, or 64.6 Kg.). On the other hand, the average height and weight of the entries in August, 1932, was 5 feet 10 inches (177.8 cm.) and 10 stone 8 $\frac{1}{2}$ pounds (148 $\frac{1}{2}$ pounds, or 67.3 Kg.), although the average age was lower—only 18 $\frac{1}{2}$ years. These cadets are boys of the better classes who mostly come from "the public schools." Major Williamson has no doubt that the physical standard of these boys is definitely on the up grade. He attributes this to better feeding at the public schools—the additional supply of vitamins and the more or less correct amount of calories. Confirmatory evidence is the fact that the weights of the 1920-1922 cadets were below those of ten years before and ten years afterward. The drop is explained by the bad feeding in the later years of the war.

The Burden on Industry of Workmen's Compensation

The extraordinarily wide manner in which workmen's compensation for accident is awarded has been shown recently (*THE JOURNAL*, March 4, p. 673). In a letter to the *Times*, Sir John Collie, whose experience with the medical aspect of compensation cases is unique in this country, points out that the official estimate of the cost of compensation is \$60,000,000 a year and that this probably errs on the conservative side. The secretary of the Industrial Welfare Committee holds that this figure should be trebled when the incidental and indirect losses are taken into account. The workmen's compensation act was intended to be comprehensive, limited only by the words "arising out of and in the course of the employment." But Sir John thinks that to make one man liable for the crass stupidity, gross carelessness or flagrant breach of orders by another did not come within such comprehension at the time. Yet such has been the legal interpretation of the act. Moreover, the psychologic effect on the workman of the certainty of compensation under all conditions is great. It leads to the taking of unnecessary risks which would not be done if he had to suffer for his own folly or disobedience of rules, as he has to apart from his work. There are grounds for thinking that quite a number of slight but compensatable accidents occur when trade depression is looming. Sir John therefore asks for a recasting of the act so as to bring it into conformity with the original intentions when it was passed. However just and desirable this may be, not in the interests of employers, who must pass on all costs to the price of their products, but in the interests of overburdened British industry, it does not seem likely that anything will be done, as all political parties are too afraid of the labor vote to do anything that can be so easily represented as hostile to the working man.

A Rubber Esophagus

Mr. Arthur Edmunds, lecturer on surgery at the Westminster Hospital, has reported in the *British Journal of Surgery*

a remarkable case in which he substituted a rubber tube for a large part of the esophagus, with almost complete restoration of function. The patient was a woman, aged 40, from whom he removed the larynx, part of the pharynx, the cervical esophagus, and a considerable part of the thoracic esophagus for squamous cell carcinoma. The operation necessitated a permanent tracheotomy and a gastrotomy. By establishing a pharyngeal sinus in the neck just below the hyoid bone, Mr. Evans was able to introduce the short end of a wide rubber empyema tube into the upper pharynx. This tube was made secure in the neck by tapes passing through the holes in the flanges and was connected by a long rubber tube with the gastrotomy opening, thus producing an external rubber esophagus. The device functioned quite well and no secondary growths followed. Now, twenty-three years after the operation, the patient is alive and well and able to enjoy life. She complains only that, if she catches a cold, the coughing upsets her and produces some chafing at the entrance of the tube into the stomach. The tubes are taken out regularly and boiled, and there is no unpleasantness from decomposing food. She can wear a dress that entirely conceals her condition from the world. She has, of course, lost her voice, but she has cultivated a whisper which is sufficient for social intercourse. She is able to take and masticate ordinary food, both solid and liquid, and to swallow it through the rubber esophagus.

Gerson's Salt-Free Diet Not Satisfactory

Since 1924 the treatment of tuberculosis by a salt-free diet has been advocated in Germany. Gerson propounded the theory that, in tuberculosis and some other diseases, sodium chloride is retained in the body and the metabolism of acids and bases is deranged. Like a good many German practices apparently highly scientific, this appears to be only pseudoscientific. The British ministry of health considered that the dietetic treatment of tuberculosis should be investigated and dispatched Dr. E. H. H. Pask, medical superintendent of the High Carley Sanatorium, to Gerson's clinic in Cassel and to Hermannsdorfer's clinics in Berlin. Dr. Pask found no evidence that even if the diet should be completely adopted there would be an appreciable improvement in the results of a sanatorium treatment. A special kitchen is necessary, the diets cost 30 per cent more than ordinary sanatorium diets, and they are too unpleasant for English patients.

A Trap for Tsetse Flies

After mosquitoes, the tsetse flies are the greatest menace to the health of tropical Africa. Some twenty species are the carriers of the trypanosomes of trypanosomiasis in man and of nagana in cattle and other domestic animals. At a meeting of the Zoological Society, Mr. R. W. Harris, a medical student, showed a film of his father's work in dealing with the fly, including the tsetse trap invented by him. As the flies are attracted by the sight of large living animals, Mr. Harris treated the hides of horses and cattle with fly-poison. But a number of the living baits died from absorption of the poison. Mr. Harris then replaced the horse or ox by a canvas framework of similar shape suspended from a tree on the shady edge of a thicket haunted by the flies. He noticed that on alighting on any part of the body of a living horse or ox, the flies crawled to the abdomen, where the skin was easier to pierce. He therefore left an open slit along the bottom of the framework, and on the middle of the upper surface he made a window to which was affixed a gauze fly-trap. The device worked. Vast quantities were caught. In the discussion Dr. Bevan, director of veterinary research in Southern Rhodesia, pointed out that the trap had been employed only for one species of tsetse and that as different species had different habits it had yet to be proved that it had a wide application. Mr. Nash, who had been engaged on research in Tanganyika, described a trap for the pupae of tsetse flies—

logs arranged so as to tempt the females to deposit their eggs. Every few weeks the logs were rolled so as to expose the pupae to the sun, which soon killed them.

PARIS

(From Our Regular Correspondent)

March 15, 1933.

The Paris Institute of Puericulture

The creation in France of scientific institutes of puericulture is of comparatively recent date. At first, these were merely consultation centers in the obstetric department, where nurslings were regularly weighed; advice was given to nursing mothers, and bottles of sterilized milk were distributed. The initiative in this field was taken by Professor Budin of Paris and by Dr. Dufour of Fécamp. These consultation centers, scattered all over France, have rendered important service in the crusade against child mortality, which had been high in France. Dr. Variot, who had devoted himself passionately to this work, was unwilling to abandon it when he reached the age of retirement and was supposed to give up his hospital department. He accordingly secured from the city of Paris financial aid for the creation of a special institute of puericulture, to be independent of obstetric hospital service. On his death, in 1919, a new institute was created with the aid, in part, of funds received from the American Red Cross, and was located temporarily in the barracks. The institute became attached to the Faculté de médecine as an annex and was opened to students. The site soon became too small. A large building has now been erected in the west end of Paris, on an area that became available through the demolition of old forts. The management of the new institute has been entrusted to Professor Pinard, who is already in retirement but who is active in spite of his advanced age (90). For years he was a Paris deputy in parliament and made contributions toward the improvement of legislation pertaining to children. The new institute was recently opened with official ceremonies, at which the president of the republic was present. The institute has three principal sections. In the center is the school proper, which, with the administration department and the quarters for 150 pupil nurses, contains all the rooms required for theoretical instruction. The laboratories, in particular, have the most modern equipment, thanks to the generosity of Madame Raba Deutsch. In the left wing are all the services of the hygienic and prophylactic dispensaries designed for the mother, the nursling and the child of school age: general services, various vaccinations and notably against tuberculosis, prophylaxis of congenital syphilis, control of hygiene of the eyes, nose, throat, ears and teeth, and physical education. In the right wing are the hospital services, where mothers who have nursing difficulties or weakly infants receive attention. The school trains physicians who are working for the university diploma in puericulture, and nurses who are candidates for the diploma of "visiting nurse," and particularly for the state diploma or the university diploma of *visiteuse d'hygiène maternelle et infantile*, bestowed by the Faculté de médecine.

Treatment for Vomiting of Pregnancy

Numerous articles are appearing in France on vomiting of pregnancy, to which widely different causes have been attributed. Some authors, Hinglais among the number, incriminate a toxic substance that is said to be secreted by the syncytial tissue of the placental villi; others seek the cause in an alteration of the hepatic function. Dr. Bec of Avignon assumes that the blood of the mother contains defense proteins that neutralize the effects of the toxic proteins coming from the fetal blood and the placenta. These are diastases, whereby the Abderhalden reaction is exemplified. The blood of pregnant women contains, moreover, a large number of abnormal substances;

there is an excess of cholesterol, a substance considered antitoxic and antihemolytic. Mr. Bec therefore conceived the idea of employing, in women affected with grave vomiting, the blood serum of mares during gestation. This blood serum, collected in ampules for injection and sterilized, was administered, in these cases, in doses of from 10 to 30 cc. a day. The effects were remarkable. The vomiting, the aversion to food and the ptalism are checked—sometimes within a few hours, but within two or three days, at the longest, if the injections are repeated. Generally, after an adequate period of treatment, the effects become permanent, and the pregnancy continues without further mishap. Some maternities are now keeping a supply of this serum in stock.

The Protection of Foodstuffs

Various protests have been made against the contamination of foodstuffs exposed for sale in front of stores. These shops are often open early. In Paris and other large cities, the cleaning of streets is accomplished by sprinkling, which keeps down the dust. In the small towns, however, the streets are still swept with dry brooms, which raise dust. The sidewalks everywhere are likewise swept, the police regulations requiring each house owner to keep the sidewalk clean in front of his property. At present, and much more than formerly, the sidewalks are covered with all sorts of filth. The Academy of Medicine, having been requested by the municipal council of Paris to express its opinion on this subject, appointed a commission to study the question. The commission announced its conclusions through Dr. Brouardel, which were adopted unanimously. It recommended, of course, that foodstuffs be protected against external contamination, and suggested various methods. Bread and cakes should be protected by transparent coverings. Meat and fish should never be exposed outside of shops. The protection of fruit is more difficult, as people are inclined to handle it before making a selection, and fruit is frequently sold from carts that pass through the streets. The instructions recommended to the public that all fruit be washed thoroughly under the faucet, at least an hour before being served on the table, in order that it may have time to dry without having to be dried with a towel. It is likewise recommended that the surface of pieces of meat be exposed to a flame for a few seconds as soon as they are brought into the kitchen, with a view to sterilizing them superficially until they can be cooked.

Cobra Venom in the Treatment of Cancer

Mr. Laignel-Lavastine and Mr. Korossios have experimented with cobra venom in the algias of cancer patients. They used doses of 0.001 mg., which is relatively high. Cancer patients who required daily injections of heavy doses of morphine observed that their pains ceased with the first injections of venom, so that the regular use of morphine could be discontinued. The injection needed to be repeated only every eight or ten days. A few days later, at a session of the Academy of Medicine, Professor Gosset gave an account of the research carried out on the same subject in the laboratory of his surgical service in the Hôpital de la Salpêtrière. They also observed a relief from pains in inoperable neoplasms, and likewise an improvement in the neoplasms themselves. In some instances, distant metastases disappeared. The patient increased in weight. One cannot speak of cancer being cured, but an unquestionably salutary effect could be noted. These researches are to be continued.

Dedication of Institute of Serology

Last year, at the commemoration of the hundredth anniversary of the birth of Prof. Alfred Fournier, it was decided to create an institute of serology that should bear his name. This institute has been completed and was recently dedicated

by ceremonies, to which the ministry of public health and the Ligue d'hygiène sociale sent representatives. A paper on the present state of serologic diagnosis and treatment of syphilis was presented by Professor Levaditi, of the Institut Pasteur, and another by Dr. Sicard of Plouzolles, director of the institute. There followed an inspection of the laboratories, which are equipped with the latest improvements. Special provision is made for research on the effects of physical agents on serums. Mr. Levaditi will be in charge of one of the laboratories.

PRAGUE

(From Our Regular Correspondent)

Feb. 27, 1933.

The Public Health Budget

The state budget for 1933, including the allotment for the ministry of health, was recently passed by the chamber of deputies. The whole state budget, which amounted in 1932 to about 9 billion 300 million crowns, was cut to 8 billion 6 million crowns, a reduction of about 7.8 per cent. The budget for the ministry of health, which amounted in 1932 to about 150 million crowns, was cut to 146 million, a reduction of about 2.5 per cent. (The rate of exchange for the crown is about 3 cents.) The minister of health, Dr. Frank Spina, in forwarding his budget stressed the importance of maintaining public health work on a high level of efficiency. The chief concern of the public health administration is the public health dispensaries, which have developed since the war into an important agency for protecting the masses from social diseases. These dispensaries are chiefly administered by voluntary organizations, which are in a difficult financial situation at present. Public authorities had to step in to assure the continuation of their activities. It would be unwise to reduce these stations when a large part of the population is unemployed. A special institution for the treatment of tuberculosis of the skin is being planned and financial means have been secured for constructing a special treatment center in Prague. Intense efforts will be directed against diphtheria, which was epidemic last year in Czechoslovakia far more than in any other year since the war. Free vaccine will be furnished for indigent children. The Calmette vaccine, the use of which has been reduced since the Lübeck incident, also will be furnished free to indigent children. In spite of the depression, more than 400 water supplies are under construction all over the country. The latest project calls for the erection of a new hospital for the state medical schools of Prague which is to commence this year and to be completed in eighteen years. An intensification of public health work is planned for territories where the need is greatest, especially the eastern half of the country, where the situation in rural areas is bad. Thirty-seven public health and treatment centers are being maintained there from public funds. If the financial situation does not necessitate further reductions, the public health can be considered sufficiently safeguarded at least for 1933.

The Recent Influenza Epidemic

The Association of Czech Physicians in Prague devoted a meeting to a discussion of the influenza epidemic which occurred in Bohemia last December and January. The discussion centered around the etiology of influenza, the exact diagnosis of which is impossible. The influenza bacillus was found only in rare cases at the beginning of the epidemic; on the other hand, *Streptococcus haemolyticus* was found quite frequently. The theory that influenza is always present finds its chief difficulty in the fact that the picture of the disease changes from year to year. The peculiarity of this epidemic was that it tended to two or three relapses and the later ones were usually more serious than the first attack. In many cases there was an interval as long as fourteen days between the two attacks.

Frequently the disease attacked at the same time a whole family, which it had not been in the habit of doing in Czechoslovakia since 1920. Often serious changes in the lungs could not be found by percussion or auscultation but could be easily seen in a roentgenogram. The disease was regularly accompanied by leukocytosis. The most frequent complications affected the ear and the throat, leading sometimes to acute edema. It was curious that the epidemic appeared weeks earlier among children, in whom it did not take an especially unfavorable course. The outbreak was accompanied by rather unusual weather, with a high pressure and considerable cold and fog. The epidemic was about as intense as that of 1920.

State Recommends Types of Clothing

The state institute of public hygiene of Prague is developing a novel line of activity. In its laboratory for the study of hygienic clothing it endeavors to work out types of clothes which will be practical and at the same time answer all the requirements of modern hygiene. Clothing is an important item in the family budget. It would be futile to attempt to influence that part of human clothing which is subjected to the fluctuations of fashion, so the work of the laboratory has been concentrated on the study of types of working clothes. The laboratory proposed a type of clothing for certain activities and presented the proposal to a group composed of hygienists, economists, and experts in textile industry and art. When this body approved the type it was recommended to the public for general trial. Such types of clothes have been worked out for peasant women, gardeners, office workers and the school children. Recently an exhibit was presented. By educational propaganda the laboratory attempts to introduce for general use the types that have been worked out. The laboratory also makes scientific studies of materials used. The types recommended are slowly coming into general use.

BERLIN

(From Our Regular Correspondent)

April 3, 1933.

Measures to Prevent Overcrowding of Universities

In view of the large number of pupils graduating from the secondary schools, the crowded universities, and the depressed state of the academic labor market, the administrations of public instruction in all German *länder*, beginning with the Easter recess, 1933, will apply the following regulations in recommending graduates of secondary schools for admission to higher schools of learning: An examining board in every secondary school will consider carefully not only the scholastic records of each individual candidate but also his human qualities, mental aptitudes, and his predilections and general performances, and on this basis decide whether or not to recommend a pupil for advanced studies. The school administration will acquaint the parents of the pupils who cannot be recommended with the decision of the examining board. Likewise, on request, university authorities will be informed of the decision of the secondary school in any case, but the information will not be given out promiscuously. Any pupil who, contrary to the advice of the secondary school from which he was graduated, persists in taking up advanced studies, cannot count on receiving any special favors in connection with his studies. Pupils who enter universities without a recommendation will be on probation for the first three semesters. Such pupils must demonstrate their suitability, and the results of any reexamination will be considered in all further tests and in granting applications for admission to the "seminar" and other drill work. The federal commissioner for the Prussian ministry of science, art and public education has issued the following statement: The Prussian administration of public instruction has given its approval to the agreement

adopted by the several *länder* whereby the overcrowding of our universities and schools of higher learning is to be checked. While graduates of secondary schools who are not especially suited for advanced study are not to be absolutely excluded from attendance at a university, the attention of such pupils must be earnestly called to the probable unhappy outcome of their choice of an academic profession in the face of the opposing advice of the authorities of the secondary school from which they were graduated.

The Vitamin C Content of Milk

An important duty of producers of various brands of powdered and condensed milk is to see to it that the milk shall contain the required amount of vitamin C, the antiscorbutic vitamin. A deficiency of vitamin C, which often occurs during the winter when cattle are confined to their stalls, may be a menace to the health of children, even though scurvy in its clinical form may not develop. Now that the nature of vitamin C is known in a general way (doubtless a highly reducing acid, probably belonging to the sugar group), research on the quality of milk has been greatly facilitated. A simple color test has been worked out that enables the analyst to estimate the ingredients of milk. Schlemmer, Bleyer and Cahnmann, who discuss the significance of this test in the *Biochemische Zeitschrift*, bring out that if cows receive the correct food even winter milk will contain sufficient vitamins. Their research confirms that milk exposed to the open air and to a higher temperature suffers a loss of vitamins. Bringing milk to a boil causes an almost negligible impairment; pasteurization causes more impairment. In preparing milk for use it was found that, in addition to the injurious effects of exposure to air, the kind of metal of which the apparatus is composed is important. The much used copper apparatus injures in a pronounced manner the vitamin content; tin is less injurious. Nickel, chromium and aluminum exert practically no damaging effects.

Widespread Charlatany

Attention is being called again and again to the unendurable situation that has arisen as a result of widespread charlatany and the marketing of fraudulent medicinal remedies. It has afforded great satisfaction that the Prussian minister of the interior, March 17, issued the following proclamation: "I again call attention to the need of the strictest observance of the joint regulation of the Prussian ministry of commerce and industry and the ministry of public welfare. In the interest of our health seeking compatriots, who are often bereft of funds, it cannot be permitted that fraudulent medicinal remedies shall continue to be sold on the streets and through house-to-house canvassing, at exorbitant prices. I demand, therefore, that this harmful practice be most rigorously suppressed."

Professor Meyer's Eightieth Birthday

The recognized leader among German pharmacists, Prof. Hans Horst Meyer of Vienna, celebrated his eightieth birthday, March 17. At the age of 29, he held the chair of pharmacology at the University of Dorpat, Estonia. From Dorpat he was called to Marburg; in 1904 he was given the chair of pharmacology in Vienna, and, refusing a call to Berlin, he held this position until he reached the age of enforced retirement. He and the pharmacologist Gottlieb of Heidelberg published "Experimentelle Pharmakologie als Grundlage der Arzneibehandlung," which, on its appearance in 1910, was the only work of its kind in existence and hence passed through several editions within a short time. On his seventieth birthday, the Vienna Academy of Sciences established the Hans Horst Meyer prize, which is bestowed every five years for the best research in the German language in the field of experimental medicine. The influence that Meyer's teachings have had on research and on practical therapy has been great.

International Commission on Circulatory Disturbances

As an outgrowth of the Kongress der Deutschen Gesellschaft für Kreislaufforschung, held in Würzburg, an international commission for research on, and the combating of, disturbances of circulation was created. England and the United States, Bulgaria, Rumania, Denmark, Sweden, Norway, Belgium, Czechoslovakia, Italy, Austria and Switzerland, in some of which countries corresponding organizations already exist, are participating in the movement. The first session, under the sponsorship of the American committee, will be held in June, 1934, in the Kerckhoff-Herzforschungsinstitut in Bad Nauheim.

ITALY

(From Our Regular Correspondent)

Feb. 28, 1933.

Congress of Orthopedics

The twenty-third Congresso nazionale di ortopedia was held at Bologna, under the chairmanship of Professor Putti. A number of foreign surgeons were in attendance. In his address, Professor Putti brought out that the work of the congress would be based on observations in more than 4,000 cases of congenital dislocation of the hip, all of which had been reexamined radiologically at least three years after operation. He pointed out that the incidence of this abnormality amounts to about 2 per thousand of population. The chief speaker was Professor Annovazzi of Milan, who based his conclusions on 1,610 cases. In the children treated under 2 years of age, the percentage of good results was 82 per cent; in children under 5 and more than 2 years of age, 66 per cent, while in children more than 5 years old the percentage of favorable results diminished gradually. These statistics show the need of resorting to the operation as early as possible.

Professor Spitzky of Vienna described a method of reconstructing the cotyloid cavity by inserting above the head of the femur (without opening the capsule) a strip of bone taken from the tibia. Professor Putti reported the results secured in the Istituto ortopedico Rizzoli in Bologna in 3,216 cases treated from 1899 to 1927. He brought out that the greater part of the complications arising in the treatment of the luxation must be attributed to the traumatic factor, and that in order to reduce the trauma to a minimum it is necessary to intervene early, after a diagnosis made a few days after the birth of the child.

The next congress will be held at Palermo. Chief topics on the program will be: (1) Criteria and Modern Methods in the Treatment of Fractures, and (2) Arthrodesis in Osteo-Articular Tuberculosis.

Apicolysis in Treatment of Tuberculosis

The Latium chapter of the Federazione nazionale per la lotta contro la tubercolosi met in Rome under the chairmanship of Prof. Eugenio Morelli. Di Fonzo spoke on the use of a small rubber balloon in the application of apicolysis. The stimulation for this research came from a suggestion of Professor Morelli, who, in 1931, recommended the experimental application of apicolysis by introducing into the extrapleural space a small rubber balloon, to be filled with air from the outside. The intervention is carried out anteriorly, a small portion of the second rib being resected. Over the balloon, filled with filtered air, the layers of muscles are spread. The stem of the balloon is retained under the skin during the first week, lest the space it occupies should serve as a path to possible infections. The postoperative course of patients treated by this method was good.

Prof. Omodei Zorini explained the clinical indications for simple apicolysis and apicolysis with plugging. He called attention to the disadvantages of plugging with paraffin; among

others, the possibility that the foreign body introduced between the costal walls and the fibrous cavity, not being sufficiently elastic, may stimulate the morbid process. Apicolysis is indicated also in case of large isolated cavities in the apex and in the subclavicular region. In subjects with fibrous tuberculosis of the apex and with cavities not more than 2 cm. in diameter, the speaker stated that good results can be secured by effecting a total extrapleural detachment of the apex and closing the wound.

Professor Ascoli described the technic of simple apicolysis as proposed by Tuffier. The prevailing conception of the method is to collapse the cavity and, more generally, the diseased areas of the lung. This treatment is useful only in the types that have shown a tendency to retraction. By ample resection of the second rib anteriorly, all the maneuvers of pleuroparietal detachment can be performed under direct vision through an opening that permits the introduction into the thorax of the hand of the operator. It is thus possible to liberate the pleural dome from the ligaments that support it and effect a complete apicolysis.

Monaldi summarized the first ten cases in which apicolysis was done in accordance with the technic described by Ascoli. The immediate postoperative course was characterized by a moderate effusion (which was absorbed within fifteen days) into the cavity formed as a result of the operation. There was a febrile temperature for from three to eight days, and increased expectoration. There has never been any diffusion of the process. The therapeutic results have not been so good in patients in whom the area of the lung that surrounded the cavities was ample and not well circumscribed. Favorable results were, however, observed in a group of subjects in whom the cavity or the cavities were surrounded by a condensed, well circumscribed area.

Meeting of Radiologists

The fifteenth session of the radiologists of the Gruppo centro-meridionale Saldo-Siculo was held in Palermo. Professor Castronuovo of Messina, speaking on radiotherapy in diabetes insipidus, pointed out that pituitary preparations effect an improvement of the polyuria, but roentgen therapy applied to the hypophysis brings about a notable improvement in the general condition of the patient. Dr. Rizzo of Palermo treated four cases of malignant tumors of the tonsil with radiotherapy and effected two cures, one of which dates back six years. Professor Zanella of Palermo obtained good results (some of the cases dating back five years or more) with roentgen therapy in cancer of the uterus and attained 80 per cent of cures in cases treated in the beginning stage. He emphasized the need of administering the maximal dose.

Professor D'Istria of Naples reported some bone lesions due to birth injuries and emphasized the necessity of roentgenograms taken after a certain interval, in order to give periosteal hematomas a chance to develop, as they may be the only visible radiologic sign of bone lesions due to calcification. Professor Canavò reported a series of cases of bronchospirochetosis in which the radiologic pictures resemble those of chronic bronchitis. Professor Busi of Rome described a case of ileocecal fistula following an operation for gangrenous appendicitis, in which the radiographic examination revealed the presence of a portion of the appendix, which was the cause of the suppuration. Dr. Vita spoke on duodenal ulcers, which, he said, originated in the serous membrane and are frequently associated with cholecystitis and appendicitis.

Three communications, presented by the school of radiology in Naples, concerned the use of a 25 per cent solution of thorium dioxide. Professor Tandoia spoke of certain structural changes that he had found in the liver in certain persons. Vaiano considered the possibility of making the placenta radiologically visible in vivo in animals with doses that harm neither the fetus nor the maternal organism.

Marriages

COLVIN BURR CHILDS, Surg., Lieut. Commander, U. S. Navy, to Miss Claretta Reese of Lake Forest, Ill., March 18.

ERNEST HUTCHINSON MENGES, Nantucket, Mass., to Miss Susan Julia Mayer Van Kleeck of New York, March 20.

EUGENE SCOTT BROWN, Tioga, W. Va., to Miss Margaret Louise Huddleston, at Summersville, February 25.

HYMEN LEON COHEN, New Orleans, to Miss Pauline Weil Herzfeld of West Point, Ga., March 22.

MORRIS J. BROOKS to Miss Bessie Finkelstein, both of Brooklyn, April 9.

Deaths

Charles Oliver Probst ☉ Columbus, Ohio; Miami Medical College, Cincinnati, 1882; member of the Public Health Council, State Department of Health; for twenty-five years secretary of the state board of health; member of the American Climatological and Clinical Association and the National Association for the Study and Prevention of Tuberculosis; past president of the American Public Health Association and the Ohio Society for the Prevention of Tuberculosis; past president and secretary of the Conference of State and Provincial Boards of Health; for ten years professor of hygiene, Starling Medical College; medical superintendent of the Franklin County Sanatorium; aged 75; died, April 2, of pneumonia.

Edward Antoine Rich ☉ Tacoma, Wash.; Jefferson Medical College of Philadelphia, 1901; fellow of the American College of Surgeons; veteran of the Spanish-American and World wars; aged 56; orthopedic surgeon to the Pierce County Hospital, St. Joseph's Hospital, Northern Pacific Beneficial Association Hospital and the Tacoma General Hospital, where he died, March 22, of burns and shock suffered when gasoline aboard his yacht exploded.

Joseph Stanley Lichtenberg ☉ Kansas City, Mo.; University Medical College of Kansas City, 1896; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; ophthalmologist to St. Joseph's and Kansas City General hospitals and the Alfred Benjamin Dispensary; aged 63; died, April 2, in the Menorah Hospital, of gas bacillus septicemia following a prostatictomy.

William James Arm Derome, Montreal, Que., Canada; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, 1895; formerly associate professor of clinical surgery, University of Montreal Faculty of Medicine; fellow of the American College of Surgeons; surgeon to the Hotel Dieu de St. Joseph and Montreal Chinese Hospital; aged 64; died, March 7.

Wilborn Arthur Upchurch, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1903; member of the Medical Association of Georgia; fellow of the American College of Surgeons; served during the World War; chief urologist to the Grady, Atlanta, Georgia Baptist, and Crawford W. Long Memorial hospitals; aged 49; died, March 27, of wounds received when shot by bandits.

Irving Dewey Williams ☉ New York; Columbia University College of Physicians and Surgeons, New York, 1903; member of the Medical Society of New Jersey; medical director and superintendent of the Central Park West and Towns Hospitals; aged 60; died, April 7, in the Battle Creek (Mich.) Sanitarium, of Hodgkin's disease.

George Slocum ☉ Ann Arbor, Mich.; University of Michigan Medical School, Ann Arbor, 1889; professor of ophthalmology at his alma mater; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; aged 67; died suddenly, March 24, of heart disease.

Garrette Van Sweringen ☉ Fort Wayne, Ind.; Fort Wayne College of Medicine, 1903; Jefferson Medical College of Philadelphia, 1905; past president and secretary of the Allen County Medical Society; on the staff of the Fort Wayne Lutheran Hospital; aged 50; died, March 29, of heart disease.

William E. Shackleton ☉ Cleveland; Cleveland College of Physicians and Surgeons, Medical Department of the University of Wooster, 1895; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staff of St. Luke's Hospital; aged 63; died, March 27, of heart disease.

Adam Tyree Finch ☉ Chase City, Va.; University of Virginia Department of Medicine, Charlottesville, 1896; secretary and past president of the Mecklenburg County Medical Society; president of the county board of education; aged 60; died, February 22, of coronary thrombosis.

William Hayes Irwin ☉ Oakland, Calif.; Cooper Medical College, San Francisco, 1904; fellow of the American College of Surgeons; on the staffs of the Alameda County Emergency Hospital and the Providence Hospital; aged 56; died, March 13, of cerebral hemorrhage and hypertension.

Frederick William Mayer, Indianapolis; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1907; member of the Indiana State Medical Association; county health officer; aged 49; died, March 29, in St. Vincent's Hospital, of multiple myeloma.

Charles A. Cramton ☉ St. Johnsbury, Vt.; University of Vermont College of Medicine, Burlington, 1893; fellow of the American College of Surgeons; oculist and laryngologist to St. Johnsbury and Brightlook hospitals; aged 61; died suddenly, March 21.

James Earle Dull ☉ Somerset, Pa.; University of Maryland School of Medicine, Baltimore, 1914; past president of the Somerset County Medical Society; served during the World War; aged 43; died, March 23, of acute nephritis.

Foster H. Bussey, Louisville, Ky.; Kentucky School of Medicine, Louisville, 1907; served during the World War; aged 53; died, March 26, in St. Anthony's Hospital, of hemorrhage of the stomach, cirrhosis of the liver and erysipelas.

John Austin Yates, Edmonton, Ky.; Kentucky School of Medicine, Louisville, 1890; also a druggist; member of the Kentucky State Medical Association; for many years county health officer; aged 72; died, March 26, of heart disease.

Donald Blair Fraser, Stratford, Ont., Canada; Faculty of Medicine of Trinity College, Toronto, 1874; formerly emeritus professor of histology, University of Western Ontario Medical School, London; aged 84; died, January 18.

Frank C. Curry, Milford, Ohio; Medical College of Ohio, Cincinnati, 1881; member of the Ohio State Medical Association; formerly health officer of Milford; aged 74; died, February 28, of angina pectoris and influenza.

Joseph B. Robinson, Hiattville, Kan.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; Jefferson Medical College of Philadelphia, 1891; aged 74; died, January 6, at Fort Scott, of chronic myocarditis.

James Edward Coyle, San Antonio, Texas; Medical Department, University of Tennessee, Nashville, 1892; member of the State Medical Association of Texas; aged 71; died, March 20, of coronary occlusion.

Edgar L. Bossett Plant, Wheeling, W. Va.; Jefferson Medical College of Philadelphia, 1895; member of the West Virginia State Medical Association; aged 63; was found dead, March 23, of heart disease.

Edward R. M. Pennypacker, Newark, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1893; veteran of the Spanish-American and World wars; aged 66; died, March 24, of heart disease.

Harry Alfred Fulton, Havelock, Neb.; Medical Department of Omaha University, 1898; aged 64; died, February 24, at the Lincoln (Neb.) General Hospital, of diabetes mellitus and carbuncle of the neck.

Ben Edward Barham, Oak Ridge, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1912; aged 48; died, March 24, in a hospital at Monroe, of pulmonary tuberculosis.

Francois Lucien Sylvestre, Montreal, Que., Canada; University of Bishop College Faculty of Medicine, Montreal, 1892; on the staff of the Hospital Ste. Jeanne d'Arc; aged 65; died, January 23.

Frank Jackson Stewart ☉ Chicago; Harvey Medical College, Chicago, 1903; Chicago College of Medicine and Surgery, 1916; aged 57; died suddenly, March 31, in St. Luke's Hospital, of heart disease.

John Felix Wilson, Dalark, Ark.; Medical Department of Arkansas Industrial University, Little Rock, 1897; member of the Arkansas Medical Society; aged 61; died, January 15, of hypertension.

William Carter Heggie, Toronto, Ont., Canada; Victoria University Medical Department, Coburg, 1886; for many years on the staff of the Toronto Western Hospital; aged 67; died, February 20.

Charles William Matlock, Cedar Vale, Kan.; Loyola University School of Medicine, Chicago, 1917; aged 39; died, February 18, in St. Mary's Hospital, Winfield, of edema of the brain.

John Tees ☉ Reno, Nev.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1896; aged 62; died, February 3, of carcinoma of the right suprarenal with metastases.

John B. Ritchey, Pasadena, Calif.; Miami Medical College, Cincinnati, 1869; member of the Medical Society of the State of Pennsylvania; aged 92; died, February 13, of senility.

A. Ernest Bruce, Detroit; Detroit College of Medicine, 1905; aged 58; died, March 16, in the Highland Park (Mich.) General Hospital, of brain tumor and diabetes mellitus.

Millard F. Hamilton, Mannington, W. Va.; American Medical College, St. Louis, 1883; formerly member of the state legislature; aged 74; died, March 20, of heart disease.

William I. Linn, Prescott, Ariz.; Columbus Medical College, 1882; past president of the Yavapai County Medical Society; aged 76; died, February 17, of myocarditis.

Edwin M. Miller ☉ Los Gatos, Calif.; Ensworth Medical College, St. Joseph, 1897; aged 63; died, February 16, in the O'Connor Sanitarium, San Jose, of heart disease.

Donald Herbert Linard ☉ Cleveland; Jefferson Medical College of Philadelphia, 1926; aged 31; died, March 26, of pneumonia, following an operation on the throat.

William Herman Wiesjohn, Chicago; Chicago Medical School, 1927; member of the Illinois State Medical Society; aged 47; died, March 31, of acute myocarditis.

Harry O. Philp, Benton, Ill.; Missouri Medical College, St. Louis, 1893; member of the Illinois State Medical Society; aged 63; died, March 22, of lobar pneumonia.

George Peck Brady, Chicago; Chicago Homeopathic Medical College, 1890; aged 72; died, February 9, in the Chicago Home for Incurables, of cerebral hemorrhage.

Arthur Guy Ashton Fletcher, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1894; served during the World War; aged 63; died, in March.

Ella Pringle Brown, Oakland, Calif.; University of Oregon Medical School, Portland, 1896; aged 87; died, March 14, in a local hospital, of lymphatic leukemia.

John Wilson West ☉ Philadelphia; Jefferson Medical College of Philadelphia, 1886; aged 72; died, March 24, in St. Joseph's Hospital, of hypernephroma.

William Paul Coons, Chicago; National Medical University, Chicago, 1901; aged 60; was found dead, February 21, of cyanide poisoning, self-administered.

Barnett A. Rynerson, West Union, Ill.; University of Louisville (Ky.) School of Medicine, 1891; aged 81; died, March 6, of chronic myocarditis.

Julius Shenkin, Philadelphia; Medico-Chirurgical College of Philadelphia, 1899; aged 53; died, March 9, in the University Hospital, of brain abscess.

Davis Montgomery Thompson, Harrodsburg, Ky.; Bellevue Hospital Medical College, New York, 1869; aged 89; died, February 22, of influenza.

Franklin E. Haynes, Abilene, Texas; University of Louisville (Ky.) School of Medicine, 1894; aged 70; died, March 21, of cerebral hemorrhage.

Joseph O. Morrison, Fairfax, Minn.; Physio-Medical College of Indiana, Indianapolis, 1889; aged 68; died, March 24, of angina pectoris.

Onezime Edmond Belcourt, Lafèche, Sask., Canada; School of Medicine and Surgery, Montreal, Que., 1880; aged 80; died, January 31.

John Edwin Morton, Salt Lake City; Hahnemann Medical College, San Francisco, 1902; aged 59; died, March 5, of paralysis agitans.

James Lafferty, Hamilton, Ont., Canada; University of Toronto Faculty of Medicine, 1882; aged 73; died, January 20, of pneumonia.

Edward T. Juchhoff, Chicago; Chicago Hospital College of Medicine, 1918; aged 40; died, January 27, of chronic myocarditis.

Raymond d'Auteuil, Quebec, Que., Canada; Laval University Faculty of Medicine, Quebec, 1927; aged 28; died, January 10.

Joseph Elie Michaud, Montreal, Que., Canada; School of Medicine and Surgery of Montreal, 1887; aged 69; died, Dec. 9, 1932.

Chauncey A. Mead, Everett, Wash.; Kentucky School of Medicine, Louisville, 1884; aged 71; died, January 19, of toxemia.

John Colbert McAfee ☉ Macon, Ga.; Baltimore Medical College, 1898; aged 59; died, March 27, of heart disease.

Bureau of Investigation

PHENOLPHTHALEIN AS A "PATENT MEDICINE"

The Public Health Menace of Self-Administered Candy Cathartics

In a bulletin issued by the Office of Information of the United States Department of Agriculture as part of its present service and released to the newspapers April 11, Dr. F. J. Cullen of the Federal Food and Drug Administration warns against the dangers to the public health in the widespread exploitation of phenolphthalein put up in the form of confections and sold to the public for self-administration. The warning has come none too soon. Physicians have for some time past awakened to the fact that phenolphthalein is by no means harmless and that its indiscriminate use carries with it a very real danger.

Phenolphthalein was introduced into medicine as a laxative about thirty years ago, following the observation that certain of the cheaper Hungarian wines to which it had been added took on an actively laxative effect. Phenolphthalein is an odorless and almost tasteless powder, very slightly soluble in water. It is practically insoluble in acids, and passes through the stomach unchanged. From the fact that it is nearly tasteless and is active in small doses, it is especially well adapted for the production of what have been called candy medicaments. Among its disadvantages is a degree of variability in action, small doses sometimes acting excessively, when at other times a larger dose will fail to act. It may cause, in addition to purgation, colic, rapid pulse, difficult breathing, and even collapse.

Hydrick as long ago as 1914 reported a case of albuminuria lasting from one to three days following the administration of phenolphthalein in doses of from one to two grains. Fuerbringer in 1917 reported a case of poisoning following the taking of about nine grains of phenolphthalein by a woman who developed cardiac weakness, a rapid, intermittent, irregular and thread-like pulse, with irregular respiration and dyspnea and some mental confusion. Later the patient developed a trace of albuminuria and an almost total anuria. Holz has reported observing severe gastro-intestinal disturbances, hematuria, chill and pain suggesting renal stone colic.

Abramowitz in 1918 was the first to report, what has since become a matter of common medical observation, a skin eruption following the administration of phenolphthalein. Wise and Abramowitz, in the *Archives of Dermatology and Syphilology* for March, 1922, reported a number of cases of skin eruption. Ayres in *THE JOURNAL* in 1921 reported two cases of phenolphthalein dermatitis. Corson and Sidlick in the same publication and the same year reported a case of urticaria from the habitual use of phenolphthalein. Rosenbloom, also in *THE JOURNAL* in 1922, reported a case of nasal herpes.

Wise, in *THE JOURNAL* of April 9, 1927, stated that one of the most common causes of recurring ulcers of the mouth undoubtedly lies in the ingestion of drugs and that phenolphthalein comes first in the production of such untoward effects. Ely reported in *THE JOURNAL*, Jan. 23, 1932, a case of a child of less than three years who had been given five "Analax Tablets" in thirty-six hours. The lips and eyelids became swollen and a bright red eruption broke out on the exposed parts.

Cleaves, in *THE JOURNAL*, Aug. 20, 1932, reported the case of a healthy ten-year-old boy who ate the contents of a box of "Ex-Lax Tablets" in mistake for candy, and died. The child's temperature rose to 106, an eruption of huge wheals appeared on the abdomen, legs and arms, hemiplegia developed, the child became delirious, and nine days after taking the Ex-Lax Tablets, died.

It is, of course, no argument against a drug to report cases of untoward effects or morbidity or fatality following its use where such use has been excessive. There may be no serious objection to a physician's prescribing for a child phenolphthalein in candy form, because the very conditions that surround the issuance and use of a prescription are such as to make it highly improbable that the dosage recommended will be exceeded. It

is an entirely different thing, however, to put up an active drug in the enticing form of candy or chewing gum, sell it indiscriminately to the public for self-medication, and advertise it in newspapers and over the radio by the ballyhoo methods common to "patent medicine" exploiters.

It is a well-known fact that the public has a general idea that even products that are of an obviously medicinal character which are sold as "patent medicines"—that is, as package medicines for self-administration in the treatment of self-diagnosed conditions—are, broadly speaking, harmless. They have a feeling that the state—using the term "state" in its broadest sense—would not permit the indiscriminate sale to the public of drugs that were really dangerous. How far this is from the truth, every physician knows, but the fallacy persists.

The facts are, there is no legitimate excuse for putting up potent drugs in the enticing form of confections and selling them indiscriminately to the public.

Correspondence

LABORATORY EXAMINATIONS IN DIABETES AND IN GASTRIC DISORDERS

To the Editor:—In the editorial comment on serum amylase (*THE JOURNAL*, March 11) appears the following: "Chemical examination of the blood . . . has displaced the older chemical examination of the urine in several directions, such as for the study of the diabetic state." Such a statement is not in accord with the facts. When studying the diabetic state the physician is primarily concerned with the metabolism of carbohydrate and the ability of the patient to utilize the carbohydrate ingested. Blood sugar estimations are of occasional importance in determining the existence of the diabetic state; i. e., in differentiating true diabetes from nondiabetic glycosuria. Occasionally the renal threshold for dextrose is so high that glycosuria does not occur in the diabetic state, so that blood sugar determinations afford the best means of ascertaining the individual's carbohydrate metabolism. But after the diagnosis of diabetes has been established and the renal threshold value is determined to be at or about the normal level, the next step is to determine the patient's capacity for carbohydrate metabolism—to measure the intake and output of dextrose. At the same time the carbohydrate intake must be adjusted so that the patient, with or without the assistance of insulin, does not excrete dextrose. Blood sugar estimations do not, and can not, displace the all important urine examination during this lengthy and most important stage in the management of uncomplicated diabetes. When the diabetic state is accompanied by incomplete metabolism of fat, with or without coma, examination of the carbon dioxide combining power of the blood is of importance. But because of the equipment, time and technical skill required for such determinations it seems doubtful that they will supplant the simple, well known urinary tests for acetone and diacetic acid.

In the second sentence the statement is made that "abnormalities of gastric function can be investigated by withdrawal of the contents of the stomach." Such a statement would lead one to believe that gastric analysis is of considerable value in diagnosis or treatment of gastric disorders. Gastric hemorrhage, true achlorhydria, and sometimes advanced gastric malignancy are conditions which might be profitably investigated by means of gastric analysis. But the remaining vast majority of gastric disorders having to do with motility or secretion have yet to be proved to be helped, either diagnostically or therapeutically, by gastric analysis. In confirmation of this view are editorials in *THE JOURNAL* (Gastric Acidity, Sept. 24, 1932, p. 1087; Significance of Gastric Acidity, April 2, 1932, p. 1187; Unexplained Anacidities, Feb. 6, 1932, p. 485; Gastric Hyper-

acidity? June 27, 1931, p. 2199), to say nothing of the numerous pertinent articles in the recent literature.

Every day many gastric analyses and blood examinations are performed with the expectation that valuable information may be obtained. But many of these laboratory procedures result only in loss of time, energy and money, and the patient receives no benefit. Why encourage the use of such tests, which experience proves to be of doubtful, if any, value?

E. H. BOYER, M.D., Clinton, Iowa.

DRESSING FOR HEMATOMA OF EAR

To the Editor:—I was greatly interested in Dr. Ferguson's dressing for the ear (*THE JOURNAL*, March 11, p. 736). However, there are some cases which will not clear up under the best pressure treatment that can be devised. Recently a piano moyer injured his ear, and a hematoma developed. I aspirated the blood and applied a pressure bandage with no success. I then incised the hematoma and removed all blood clots and irrigated the cavity with an antiseptic solution, but even this failed to cure the trouble. I therefore reopened the wound and packed the cavity of the hematoma with phenol (carbolic acid) on cotton. I had first, however, applied some sterile petrolatum about the opening of the cavity. After five minutes' application, I removed the phenol pack and applied a dressing to the ear. The next day the ear was rather inflamed and swollen. The inflammation and swelling soon subsided and the patient made an uneventful recovery with perfect results. I can recommend this treatment for those patients who are willing to bear a little pain to get a good cosmetic result.

NATHAN STEINBERG, M.D., Philadelphia.

NARCOLEPSY IN THE PICKWICKIAN SENSE

To the Editor:—The portrayal of the symptoms of a disease in a fictional character is always interesting reading. This is particularly true if the novel appeared before the malady was studied systematically or recorded authoritatively in the medical literature. An example of this kind occurs in Charles Dickens's *Pickwick Papers*. In a humorous character sketch, Dickens portrayed the symptoms of narcolepsy forty years before the publication of its first description as a clinical entity.

This disease, which physicians find fascinating because of its rarity and extraordinary manifestations, was described in 1877 by Westphal. He has properly received the credit attached to priority, although it was not until three years later that Gelineau first applied the term narcolepsy as a name for brief and sudden attacks of irresistible sleep. One of his patients had some two hundred attacks a day, each lasting from one to five minutes. Sir William Gowers described a similar case in a young girl of twenty-two and observed that if she yielded immediately to the inclination to sleep, the attack did not last more than about five minutes; but if she struggled to keep awake, sleep always conquered in a short time and lasted longer, ten or fifteen minutes. Gowers emphasized the rareness of these cases and insisted that they should not be confused with hysteria, "sleeping sickness" or minor epilepsy. More dramatic illustrations of the affliction are given by Perrier, whose patient, a soldier, went to sleep on guard duty, and by Spiller, who tells of a fireman sleeping while holding the grabirons of a locomotive traveling about seventy miles an hour. An eight year old girl, reported by Dr. Weech, fell asleep in the waiting room of a noisy hospital clinic and again on the examining table. She also displayed the "emotional asthenia" which Weech regards as essential to the diagnosis of true narcolepsy. Emotional states, such as laughing or crying, resulted in the production of a sudden overwhelming feeling of weakness and a general loss of muscular power. Similar ailments classified as

symptomatic narcolepsy may accompany obesity, cerebral tumors, severe circulatory disorders, encephalitis, epilepsy and hysteria. The etiology, though unproved, probably depends on a localized injury of the brain.

Without available medical publications concerning this disease, the publication of *Pickwick Papers* in the year 1837 illustrates Dickens's acute powers of observation, as well as his lively sense of humor. The individual whose traits of character are modified by the symptoms of narcolepsy is Mr. Wardle's servant, generally spoken of as "Joe, the fat boy." The following unrelated sentences from the fourth chapter have been chosen as most likely to present an adequate description of his chief characteristics:

... and on the box sat a fat and red-faced boy, in a state of somnolency, whom no speculative observer could have regarded for an instant without setting down as the official dispenser of the contents of the before mentioned hamper, when the proper time for their consumption should arrive.

"Joe—damn that boy, he's gone to sleep again!"

Mr. Winkle mounted to the box, the fat boy waddled to the same perch, and fell fast asleep instantly.

"Joe, Joe!" said the stout gentleman—"Damn that boy, he's gone to sleep again. Be good enough to pinch him, Sir—in the leg, if you please; nothing else wakes him—thank you. Undo the hamper, Joe."

"Plates, Joe, plates."

"Now, Joe, the fowls. Damn that boy; he's gone to sleep again. Joe! Joe!" (Sundry taps on the head with a stick, and the fat boy, with some difficulty, roused from his lethargy).

"Damn that boy," said the old gentleman, "he's gone to sleep again."

"Very extraordinary boy, that," said Mr. Pickwick, "does he always sleep in this way?"

"Sleep!" said the old gentleman, "he's always asleep. Goes on errands fast asleep and snores as he waits at table."

"How very odd!" said Mr. Pickwick.

"Oh! odd indeed," returned the old gentleman, "I'm proud of the boy—wouldn't part with him on any account—damme, he's a natural curiosity! Here, Joe—Joe—take these things away, and open another bottle—d'ye hear?"

The fat boy arose, opened his eyes, swallowed the huge piece of pie he had been in the act of masticating when he last fell asleep, and slowly obeyed his master's orders.

As the *Pickwickians* turned round to take a last glimpse of it, the setting sun cast a rich glow on the faces of their entertainers, and fell upon the form of the fat boy. His head was sunk upon his bosom; and he slumbered again.

The absence of the early history makes it difficult to be certain that this was a genuine case of true narcolepsy. The association with obesity is significant. To snore as he waits at table may represent an exaggeration on the part of Mr. Wardle, but to fall asleep while eating leaves little doubt concerning the nature of the condition. There is no mention of emotional asthenia associated with the attacks. On the contrary, Joe exhibited considerable poise as the unseen witness of Mr. Tupman's amorous activities, although this scene may have been less strongly emotional than the reactions of the participants indicated. PHILLIP E. ROTHMAN, M.D., Los Angeles.

"DOES PRIMARY TUBERCULOUS INFECTION AFFORD ADEQUATE PROTECTION AGAINST CONSUMPTION?"

To the Editor:—In *THE JOURNAL*, April 8, appeared an article with this title by Dr. Chester A. Stewart of Minneapolis. Any attempt at evaluating the interesting material presented should not overlook the fact that certain groups have parted ways with the fundamentalists in phthisiology by rejoining the ranks left meager by the virtual abandonment of the contagionist's attitude toward tuberculosis of a few decades ago.

In view of the continuation of the downward trend, since the late period of the eighteenth century, of the mortality curve from tuberculosis, I believe that it is an unwarranted nullification of the program of public education, from which so much benefit has been derived, to propagandize in favor of the high contagiousness of tuberculosis, especially since there are many of that school who find it necessary or expedient to teach that primary infection by tubercle bacilli, as manifested by the cutaneous allergic response to tuberculin, is tantamount to tuberculous manifest disease.

A return to the use of the word "consumption," in referring to manifest tuberculous disease of whatever stage, certainly serves to frighten many into accepting such theories that "primary tuberculous infections are distinctly detrimental," "observations indicate that first infections by *Mycobacterium tuberculosis* alter the normal state of resistance possessed by the uninfected body in such a manner that . . . the patient is doomed thereafter to have [consumption and the like] develop, if successfully reinfect," and that there may exist, without confirmatory evidence, one or more foci of indirect primary disease from which no separation into observation or manifest disease should be made.

As most adults have, have had or will have what the author considers "primary tuberculosis," demonstration of which primary infection by tubercle bacilli is recognized in the specific allergic skin reaction, yet with only small prospect of having such so-called primary tuberculosis result in any clinical or manifest disease, I feel strongly that, for the time being, or at least until some refuting scientific data are at hand, the accepted term "primary infection" should not be replaced by any such term as would imply that manifest disease had already become established at the time of first infection, such as in syphilis, and that treatment must therefore be definitely instituted.

The preponderance of existing evidence rests on the side of those who, like Heimbeck and a host of others, find a relative, though not absolute, immunity to tuberculous disease among allergic adults.

We should adhere, for the present, to the recently established Diagnostic Aids—Childhood Type of Tuberculosis as approved by the Committee on Childhood Tuberculosis of the American Sanatorium Association as furnishing a classification as satisfactory as any of the series of events which may follow a primary parenchymal infection by tubercle bacilli.

It is well, however, to continue studies that seek to trace the pathways to, and responsible factors for, resultant tuberculous disease among the relative few out of the great numbers who have experienced primary or simple infections.

Esmond R. Long, in a recent article, presented the stand that should be adopted at this time: "Certain groups [have] the conviction that, so far from being a factor in resistance, allergy is a dangerous state predisposing to destructive disease. As a matter of fact, no such dogmatic principles can be laid down, and . . . one of the praiseworthy modern trends in immunological theory in tuberculosis is [by] not attempting to explain any case in terms of sweeping generalizations." D. O. N. LINDBERG, M.D., Decatur, Ill.

Medical Director, Macon County
Tuberculosis Sanatorium.

DOSAGE OF REDUCED IRON

To the Editor:—My attention has been called, particularly by Dr. Marie L. Carns of Madison, Wis., to an error in my recent article on "Primary Hypochromic Anemia," which appeared in THE JOURNAL, February 25. I implied that reduced iron was ferrous oxide (FeO) and that its actual iron content was 78 per cent. This is incorrect. Reduced iron is metallic iron which has been produced by hydrogenating ferrous oxide, the resultant material being almost pure metallic iron, containing from 90 to 100 per cent of that metal. I have used this preparation in capsules containing 1 Gm. (15 grains), the daily dosage being from 3 to 6 Gm. The actual iron content at this dosage is extremely high, from 3,000 to 6,000 mg. of iron. It is probably necessary to use this large amount of actual iron because of the insolubility of the preparation. I have not found it necessary to use hydrochloric acid in conjunction with reduced iron even in those cases showing complete achlorhydria.

WILLIAM DAMESHEK, M.D., Boston.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SUDDEN DEATH IN INFANCY

To the Editor:—I have an interesting case to report. The other morning, January 13 (it was also Friday), I was called to see a baby that had died in its sleep. There was no evidence of suffocation or foul play. The baby was well nourished and well developed, and seemed to be perfectly happy and mentally alert, as much as a child of 5 months should be. I saw the child at 6:30 a. m., and rigor mortis had already set in as well as postmortem lividity. The only external abnormalities were a dullness about the size of a lemon, in the upper portion of the chest, more on the left side, and the cranium was very soft, there being no evidence of ossification. Even the mother had noticed this but did not realize that it was not natural even for infants. Autopsy revealed an enlarged thymus, 9 by 5.5 by 1.5 cm., overlapping the heart and extending down to the fourth intercostal space with a firm origin about the trachea and esophagus. The spleen possibly was slightly enlarged. No large glands could be felt in the mediastinum or elsewhere. The other organs were in order and no pathologic changes were found in any of them. On inquiring back into the history of the child I learned from the mother that her baby would not take the nipple but would eat with a spoon and choked a little on her milk. Otherwise she played with some neighbor children apparently in the best of health. I forgot to mention that there was a definite rosary on the ribs at the costal margins, although the infant had received cod liver oil since 2½ months of age. These bony prominences were especially noticeable along the under surface. Was this a case of simple thymus enlargement? Was it status lymphaticus? Was there a possibility, on account of the condition of the skull, for there to be some pathologic condition in the parathyroids? It was this condition of the cranium that is particularly interesting. I should like to hear from you as soon as it is possible. Please omit name.

M.D., Nebraska.

ANSWER.—Sudden death of infants is commonly ascribed to the presence of a large thymus, or to the condition known as status thymolympaticus. It has been shown that enlargement of the thymus is compatible with perfect health; that in normal well developed infants the thymus tends to be large, whereas in weakly, atrophic or sick infants it diminishes in size. Only in exceptional cases has the thymus been shown to exert pressure on the trachea, bronchi, large vessels or underlying organs in sufficient degree to produce death. It has been suggested that the hyperplastic thymus produces a toxic chemical substance. This is purely conjectural and there is no proof as to the nature or action of such a substance if it exists at all. If the thymus produces sudden death, what is the explanation of its mode of action? The same question may be asked with reference to status thymolympaticus. The whole question of thymus death cannot be answered satisfactorily at the present time. The true physiology and the function of the thymus gland is far from being understood. Hammar, who has studied this organ for fifty years, is still not clear as to its function. Some of the deaths supposed to have been due to thymus hyperplasia have on closer investigation been found to be caused by infection, the aspiration of food particles into the bronchi and lungs. Infantile tetany is said to cause sudden death occasionally by producing cardiac arrest in systole. None of these assumptions explain all the sudden deaths of infancy.

Answering specifically the questions submitted:

1. The thymus was large, but it has been shown that the thymus varies in size under normal conditions for children of the same age; it is large and heavy in well developed children, and atrophies rapidly in weakly and sick children. Whether the thymus caused sudden death is difficult or impossible to prove in the light of our present knowledge and the subject is controversial. Many well informed students of this phase of pathology would be disinclined to make an affirmative statement.

2. There is no evidence of the existence of status thymolympaticus in this infant. This condition implies a universal hyperplasia of lymphatic structures, including the spleen, regional lymph nodes and the lymphoid tissue of the gastrointestinal tract. No mention of such pathologic changes is contained in the autopsy report.

3. The soft condition of the cranial bones was undoubtedly due to craniotabes, which according to most investigators is a manifestation of rickets. However, a smaller group of observers maintain that the softening occurring in premature and some new-born infants is due to osteoporosis, the cause and nature of which is obscure.

The manifestations of parathyroid gland deficiency are characterized by low blood calcium, tetany and usually associated

rickets. In order to prove a parathyroid dysfunction it would be necessary to have evidence of the presence of the factors mentioned.

INTERPRETATION OF MANTOUX TEST IN TUBERCULOSIS

To the Editor:—I have been giving the Mantoux test to the children of Jefferson County School and to date have done 1,500 tests, with a positive reaction in 14 per cent of the children tested. About 1 per cent so far show activity. Some of the children have had severe local reactions and this seemed to be the case in those who are healthiest. Children whose general appearance shows them to be very much under par physically show a weaker reaction and the reactions in two brothers (out of four brothers to whom I gave the test last spring) were negative while the other healthier looking brothers showed a positive reaction. I have had one of these that showed a negative reaction in bed for three months with active tuberculosis. In another case which showed a very positive reaction the roentgenologist reported a negative or normal chest picture. I am anxious to know whether or not the severity of the reaction shows greater immunity than in the less severe. Of course I know that the children with active tuberculosis may be so toxic that the Mantoux test will be negative. In adults would a severe reaction show a healed chest condition or not? Any further information you can give me in regard to tuberculosis in children, and the interpretation of the reaction to the Mantoux test will be greatly appreciated.

JAMES D. BLEVINS, M.D., Beaumont, Texas.

ANSWER:—Regarding the children mentioned, it seems that the one with tuberculosis must have been in an anergic state as a result of an overwhelming infection. Otherwise, with good technic and good tuberculin the reaction is roughly proportionate to the quantity of sensitizing antigen bathing the tissues. This in turn is dependent roughly on the size of the combined lesions, up to the point of overwhelming the body tissues. It does not necessarily mean that the immunity increases in proportion to the reaction, which is largely a hypersensitivity. A certain degree of "immunity" or protective power accompanies this hypersensitivity, or "allergy," as some term it, yet in large doses it may produce such an overwhelming response that the result is an exudative lesion of greater proportions than would result in a less sensitive person. A moderate sized lesion healing or active in an otherwise healthy child would tend to respond to the maximum, not only because of the presence of sensitizing antigen but also because the cells of the host are in a proper state of health and nourishment to give such a response. A roentgen examination is of no value if negative. Only about 50 per cent of healing primary lesions can be seen by this means.

In adults a severe reaction may show either an active lesion or a quiescent lesion (one that is partially encapsulated but still liberates toxins). It is of little value in a diagnosis or prognosis of either type. In latent and healed lesions, however, recent opinion seems to incline to a belief in a parallel disappearance of the tuberculin reaction with living tubercle bacilli. If not simultaneously, the disappearance follows soon in the wake of bacillary destruction.

PREMATURE ORGASM

To the Editor:—In THE JOURNAL, January 21, page 210, delayed orgasm was discussed. What treatment is suggested for the opposite condition, premature orgasm, other than the possible injection of a mild solution of cocaine? Is the latter a safe procedure? If so, how may it best be accomplished and what strength solution should be employed? Your terse, cryptic answers are often highly instructive and save much time. Please omit name.

M.D., Maryland.

ANSWER:—Leaving out of consideration the purely psychic cases, which probably constitute the majority and which may be controlled by psychotherapy, the condition of rapid orgasm may be due to one of two distinct pathologic conditions, and it is absolutely essential to make a correct differential diagnosis as the treatment is entirely different for each cause. The first condition is one of irritability of the prostate and prostatic urethra due to congestion of these parts. In these cases the rapid orgasm is due to the fact that the reflex act of coitus, owing to the congestion already present, takes place at once with the added congestion of beginning coitus. This condition may be likened to a congestion of the nose wherein the slightest current of air will produce the reflex act of sneezing, whereas the normal nose will stand severe currents of air without sneezing. The treatment of this condition is to get rid of the local pathologic congestions by the use of gentle prostatic massage every five days and instillations of weak (from 1:3,000 to 1:500) silver nitrate solutions into the prostatic urethra with the Bangs sound syringe.

The second cause for rapid orgasm is a weakening of all the muscles connected with the sexual act. Around each vein in the penis is a muscular band whose function it is to con-

tract and remain contracted for a sufficient period of time, so that the blood that has entered the penis by the dilated arteries shall not be permitted to escape through the veins but shall remain in the penis, thus giving it its rigidity. If these muscles are weak and relax too soon, the blood will flow out of the penis too quickly, with a consequent rapid end of the coital act. The treatment is a stimulation of all these muscles, and this is best accomplished by the use of the sinusoidal-faradic current of moderate rapidity and as strong as the patient can bear without any pain. One cable is connected with a rectal electrode and the other with a wet-sponge electrode applied to the perineum, and the current is allowed to pass for about ten minutes. Treatments may be given every three or four days till the patient is well. The use of cocaine in either of these conditions is unpractical and dangerous. It has to be given within a half hour of coitus and into the prostatic urethra, and there are cases of marked idiosyncrasy in which even weak solutions given in this way have caused serious symptoms of cocaine poisoning.

MYELITIS AFTER SPINAL ANESTHESIA

To the Editor:—Kindly discuss the changes in a case of myelitis due to spinal anesthesia. What is the treatment? What is the prognosis? Please omit name.

M.D., Georgia.

ANSWER:—Various kinds of cord lesions may follow spinal anesthesia, such as conus lesion with retention of urine and feces and painful anesthesia about the anus, as reported by J. Boisseau (*Rev. neurol.* 1:1148 [June] 1930). In this case all treatment, including radiotherapy and epidural injection of iodized oil, proved futile. J. Michelsen (*München. med. Wchnschr.* 79:1148 [July 15] 1932) has devoted an article to the cord lesions following spinal anesthesia. To our knowledge the worst case of all is described by Nonne and Demme (*Wien. klin. Wchnschr.* 41:1002 [July 12] 1928) after herniotomy, with death after sixteen months. Conus myelitis, delicate adhesions between the cord and the thickened dura, and ascending cord degeneration were found post mortem. The treatment must necessarily vary in different cases according to the symptoms present, and no general rules can be laid down. Further data regarding the nervous complications of spinal anesthesia are given by F. G. Lindemulder (*THE JOURNAL*, July 16, 1932, p. 210) and by Davis, Haven, Givens and Emmett (*THE JOURNAL*, Dec. 12, 1931, p. 1781).

SODIUM ION MOST HARMFUL IN HYPERTENSION

To the Editor:—In Queries and Minor Notes (*THE JOURNAL*, January 14), Louis L. Sherman, M.D., of Oakland, Calif., asks pointedly, "Is it the sodium or the chloride in table salt which does the harm to patients having high blood pressure?" This is an important point. I wish to repeat his question and I hope some one can give a definite and authoritative answer to it.

VERNON A. CHAPMAN, M.D., Milwaukee.

ANSWER:—A dogmatic answer to this question is impossible. As previously stated, there is no convincing evidence that either the sodium ion or chloride ion of table salt has any appreciable deleterious effect on arterial hypertension. As the question was asked specifically in connection with hypertension, and did not state whether renal impairment existed or not, the foregoing is the only statement justified. When renal functional impairment exists, either associated with or independent of arterial hypertension, the sodium ion is definitely the more injurious ion of sodium chloride.

ALBUMINURIA IN YOUNG ADULT

To the Editor:—Please suggest treatment in a young adult having a trace of albumin and a few casts in the urine, otherwise normal, noticed during an insurance examination. Low protein and salt reduction diet after reasonable time produced no improvement. Please omit name.

M.D., New York.

ANSWER:—The treatment of albuminuria with the presence of a few casts in the urine depends on an accurate diagnosis. The first to be considered is the functional orthostatic albuminuria.

These albuminurias are characterized by the intermittent presence of albumin in the urine, and also the absence of formed elements, such as casts and cells of various kinds. The morning urine passed before arising is usually free of albumin. It must be admitted that, in the orthostatic albuminuria, albumin may be constantly present and casts may be observed. The latter group is difficult to differentiate from a genuine nephritis.

In orthostatic albuminuria there is rarely a marked deflection of the spine, usually a scoliosis in the lower thoracic and lumbar regions. The treatment for this condition is

measures to correct the spinal deformity by exercise or appliances and to avoid overexercise and fatigue.

If there is no evidence of edema or hypertension, if there is complete absence of red blood cells in the urine, or if the kidney function test is normal, the blood nitrogen values are not increased above their normal figures and the urine is not concentrated, associated with high specific gravity, one may infer that the albuminuria with a few casts is not due to organic kidney disease but in all probability to an orthostatic albuminuria. It should be cautioned, however, that the latter diagnosis should not be made until most careful, thorough and repeated examinations have been made, in order that an organic lesion may be eliminated. If the lesion should prove to be organic in nature, general hygienic measures should be employed and a proper dietary regimen instituted with a scanty amount of protein and salt in the food.

If anemia is present, iron should be employed. If foci of infection are detected, they should be removed and treated.

CELLASIN IN DIABETES

To the Editor:—I am enclosing circular advertising material which I have been receiving from time to time advocating the use of "Cellasin" as a cure for diabetes mellitus. It occurs to me that the claims for this product are misleading, although the advocates are careful to state that it is a ferment but go further to state that by this means it is a "metabolic ferment." You are probably already aware of the existence of this product and the advertising campaign. I have not seen any comment in *THE JOURNAL* about it and thought perhaps it would be wise to bring it to your attention. In my diabetes service at the Leonard Hospital I have found several patients who have used this product on the advice of their family physicians and were led to believe that they could rely on it as a protection against the ravages of this disease. Perhaps you can find some way to discuss its merits in *THE JOURNAL*.

STEPHEN H. CURTIS, M.D., Troy, N. Y.

ANSWER:—A report on Cellasin was made by the Council on Pharmacy and Chemistry in 1908 (*THE JOURNAL*, Sept. 12, 1908, p. 931) and a second report was issued in 1909 (*THE JOURNAL*, Oct. 30, 1909, p. 1499). A note reviewing the Council's report was published in *THE JOURNAL*, July 4, 1924, page 58. The investigation of the Council brought out that Cellasin did not contain a ferment as claimed but a spore-producing bacterium which splits sucrose largely into lactic acid.

No acceptable evidence for the value of Cellasin in the treatment of diabetes appears to have been published. On the other hand, a report was received from one who has done much work bearing on metabolism, stating that he had made one careful metabolic experiment in the use of Cellasin in the treatment of diabetes mellitus. In this experiment the use of Cellasin had no beneficial effect on the patient's diabetes.

PROPHYLACTIC IN GONORRHEA

To the Editor:—1. Would a weekly injection of 2 per cent strong silver protein as a prophylactic for gonorrhea, in the male urethra over a period of one year or many months, be likely to produce strictures, in view of its highly irritating character? 2. Is it safe to use a triweekly injection of 1 per cent strong silver protein in the case of a man, having a chronic anterior urethritis for eight months, and who appears improved by such an injection? These injections produce no irritation as far as any subjective symptoms are concerned. Please omit name.

M.D., New York.

ANSWER:—1. A 2 per cent injection of strong silver protein used once a week for a year would probably not produce a stricture, but why not use a milder silver solution, such as mild silver protein?

2. It is safe enough to use a triweekly injection of 1 per cent solution of strong silver protein, but urethritis which does not clear up in eight months is evidently not being helped by the injection. Perhaps it is causing it to persist.

INJURY TO LIP DURING TOOTH EXTRACTION UNDER LOCAL ANESTHESIA

To the Editor:—My dentist extracted a boy's lower molar under procaine hydrochloride with epinephrine and soon the lower lip began to swell. In a few days a slow-healing ulcer developed on the lower lip. What was the modus operandi and can similar mishaps be avoided in the future? A colleague told him that he had had similar experiences.

M.D., Illinois.

ANSWER:—Because of lack of more detail, the question can hardly be answered. If the inferior alveolar and lingual nerves have been blocked, the lower lip must also have become anesthetized and under this anesthesia any form of injury, mechanical or thermic, may have occurred without the boy's notice. As the procaine-epinephrine anesthesia wears off in approximately

two hours, a persistence of anesthesia and a lack of regeneration following the injury to the mucous membrane should point to a more permanent damage of the injected nerve. The size of the needle, an unusually large hematoma around the injection, or a faulty solution could all be considered.

A partial injury of the inferior alveolar nerve could have also occurred at the socket of the extracted tooth. Such partial nerve injuries are known to produce trophic changes. As there are no data concerning a hyperesthesia or paresthesia of the lower lip, this is only a conjecture.

NUMBNESS AND PAIN AFTER INJURY TO BRACHIAL PLEXUS

To the Editor:—A woman, aged 30, suffered a severe contusion of the right shoulder with fracture of the clavicle at the inner third. The fracture was wired. A severe hyperesthesia of the medial aspect of the arm, forearm, thumb and medial half of the first finger cleared after three months. The numbness and pain, however, have persisted, after two years, in the medial half of the terminal phalanx of the thumb. Please advise treatment and prognosis. Kindly omit name.

M.D., Ohio.

ANSWER:—There probably was an injury of the brachial plexus at the time of the fracture, with resulting fibrosis and scar tissue formation about it. The fact that pain and numbness persist after a period of two years indicates that the process of recovery has probably gone as far as it will go and that the symptoms still present are likely to persist unless the brachial plexus is carefully exposed and freed from the scar tissue which partially surrounds and compresses it. Needless to say, the operation is technically difficult and associated with a certain degree of risk. Whether or not it should be undertaken depends on the severity of symptoms and the disability which the symptoms produce.

PAIN IN TESTIS

To the Editor:—I have a patient concerning whom I wish to solicit your help, as I am unable to decide the source of his trouble. For the last five years he has had a dull ache in the left testicle at times amounting only to a consciousness of its presence and at other times increasing to slightly more severe. Following intercourse for the next day he is almost incapacitated with the increased intensity of the pain, which lasts about twenty-four hours, at which time it subsides to its usual slight aching character. He has no varicocele, the prostate seems normal, and the urine is normal. Can you offer any suggestions as to the diagnosis and treatment?

M.D., Wisconsin.

ANSWER:—Pain in the testicle aggravated by sexual intercourse is most frequently due to disease in the prostate gland or seminal vesicles or both. In order to exclude the adnexa as factors in the production of pain, it is most important to massage the prostate and vesicles and to examine the strippings obtained for the presence of pus. It is best in doubtful cases to examine the strippings for pus at least three times, preferably at weekly intervals. If examination of the prostate and vesicles gives negative results, it might be well to examine the patient's deep urethra with the urethroscope and, failing to find pathologic changes there, it might be well to examine him for the presence of a neuritis. However, the cause is most frequently found in the prostate and vesicles and the treatment, therefore, directed toward the treatment of infection in the prostate and vesicles; namely, (1) massage of the prostate and vesicles about once a week; (2) instillation of a 1 per cent solution of strong silver protein into the urethra after massage; (3) heat applied to the prostate and vesicles by rectum by means of any one of the well known devices for this purpose.

HARM IN EYE EXERCISES AND EYE MASSAGE

To the Editor:—Is eye exercise, eye massage, and the practice of central fixation by use of the Snellen test card of any value in the treatment of errors of refraction such as myopia and hyperopia? In your opinion would the practice of these have any injurious effects on the human ametropic eye or help produce any anatomic changes, such as detachment of the retina? What is the difference in length of the optical axis of an emmetropic eye and an ametropic eye with a myopia of 1 diopter? Please omit name.

M.D., Indiana.

ANSWER:—No. Eye exercise, eye massage, and central fixation of the Snellen or any other card are the hooks on which the modern ophthalmic quack impales his victims, aided by the lure of a lot of high-sounding hokey. Such practices cannot influence errors of refraction one iota in any respect, but eye exercises and eye massage can be most destructive in detachment of the retina and certain other conditions. Three diopters of myopia is equivalent to an increase in length of 1 millimeter; hence 1 diopter of myopia indicates an axial difference in length of approximately one-third millimeter.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Milwaukee, June 12. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The general oral, clinical and pathological examination will be held in Milwaukee, June 13. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Milwaukee, June 12. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARKANSAS: Regular. Little Rock, May 9-10. Sec., Dr. Sam J. Albright, Box 54, Searcy. *Eclectic*. Little Rock, May 9. Sec., Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith. *Homoeopathic*. Little Rock, May 9. Sec., Dr. Allison A. Pringle, Eureka Springs.

CALIFORNIA: Reciprocity. San Francisco, June 14. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: Basic Science. Prerequisite to license examination. New Haven, June 10. Address State Board of Healing Arts, 1895 Yale Station, New Haven.

DELAWARE: Wilmington, June 13-15. Sec., Dr. Harold L. Springer, 1013 Washington St., Wilmington.

FLORIDA: Jacksonville, June 12-13. Sec., Dr. William M. Rowlett, Box 786, Tampa.

IOWA: Iowa City, June 6-8. Dir., Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KENTUCKY: Louisville, June 7. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

MISSOURI: St. Louis, June 7-9. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. The examinations will be held at centers where there are five or more candidates, May 8-10, June 26-28, and Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: Omaha, June 7-9. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

OHIO: Columbus, June 6-9. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

WISCONSIN: Basic Science, Milwaukee, June 17. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. *Regular*. Milwaukee, June 27-29. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.

WYOMING: Cheyenne, June 5. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

Hawaii January Report

Dr. James A. Morgan, secretary, Board of Medical Examiners, Territory of Hawaii, reports the written examination held in Honolulu, Jan. 9-12, 1933. The examination covered 10 subjects and included 55 questions. An average of 75 per cent was required to pass. One candidate was examined and passed. One physician was licensed by endorsement. The following colleges were represented:

College	PASSEO	Year Grad.	Per Cent
Washington University School of Medicine.....	(1929)		80.3
College	LICENSED BY ENDORSEMENT	Year Grad.	Per Cent
College of Medical Evangelists.....	(1932)	N. B. M. Ex.	

Pennsylvania Reciprocity Report

Mr. Charles D. Koch, secretary, Pennsylvania State Board of Medical Education and Licensure, reports 5 physicians licensed by reciprocity with other states from Jan. 3 to Jan. 20, 1933. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University Medical School.....	(1904)		Illinois
University of Maryland School of Medicine and College of Physicians and Surgeons.....	(1924)		Indiana
Detroit College of Medicine and Surgery.....	(1929)		Michigan
University of Minnesota Medical School.....	(1931)		Minnesota
Syracuse University College of Medicine.....	(1923)		New York

Alabama January Report

Dr. J. N. Baker, secretary, Alabama State Board of Medical Examiners, reports the written examination held in Montgomery, Jan. 10-13, 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Two candidates were examined, both of whom passed. Two physicians were licensed by reciprocity with other states from January 4 to January 9. The following colleges were represented:

College	PASSEO	Year Grad.	Per Cent
University of Louisville School of Medicine.....	(1932)		81.9
University of Tennessee College of Medicine.....	(1932)		86.7
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago Medical School.....	(1921)		Illinois
University of Pennsylvania School of Medicine.....	(1928)		Penna.

Book Notices

Asthma, Hay Fever and Related Disorders: A Guide for Patients. By Samuel M. Feinberg, M.D., F.A.C.P., Assistant Professor of Medicine and Attending Physician in Asthma and Hay Fever Clinic, Northwestern University Medical School. Cloth. Price, \$1.50. Pp. 124, with 8 illustrations. Philadelphia: Lea & Febiger, 1933.

This is a readable book for sufferers from hay fever and asthma. It presents a distinct advantage in being free from discussion of the dangers and handicaps that overhang many of these patients, which of necessity must be described in books for the profession. The book contains an historical review of the subject, a description of the symptoms and mechanism of the disease, and a discussion of primary and secondary causes of the illness and of methods of examining and treatment which the hay fever patient should know in order to cooperate well with the physician. In the historical review, Feinberg states that "not until 1819 did John Bostock, himself a sufferer of the malady, describe hay fever as a definite medical entity." However, Bostock failed to appreciate the cause of the condition. "He said that summer catarrh was due to heat and the sun's rays." Why couldn't he have given Bostock credit for what he really said he discovered? The author mentions the fact that nasal operations should be taken only after all other measures have been used to relieve the malady. This might have been emphasized more heroically. He also mentions the need of caution about the use of serum in sufferers from hay fever or asthma. This should have been emphasized still more heroically, since the number of deaths reported from the use of serum in asthma patients is growing so steadily that its use in cases of allergy should be looked on as a greater hazard than a skull operation for brain tumor in a nonallergic case. He gives detailed descriptions of the use of epinephrine which every asthma patient should know and describes the use of symptomatic remedies and finally the necessity of the avoidance of "patent medicines," which contains nothing unknown to the medical profession at large. He finally urges against credence in the deceptive advertising of quacks. He might have urged with equal emphasis against credence in unwarranted and unsought for advice from friends and neighbors. Every asthma patient should be warned that free advice is worth exactly what it costs—not a cent.

Thérapeutique médicale. V: Peau, syphilis et cancer. Par MM. M. Loeper, G. Millan, L. Bory, C. Simon, A. Sézary, Ch. Flandin, H. Gougerot, M. Villaret, G. Roussy, E. Schulmann, R. Proust, E. Peyre, H. Rubens-Durval et Th. Alajouanine. Paper. Price, 50 francs. Pp. 408. Paris: Masson & Cie, 1932.

This small volume includes lectures, complementary to Loeper's course on therapeutics, given during 1932. In his discussion on skin infection, Milian deprecates the prolonged use of poultices, because of their tendency to give rise to and aggravate furunculosis, owing to maceration of the skin which they produce. In the treatment of pyodermitis he prefers 1 per cent solution of iodine in alcohol applied twice daily. He also makes extensive use, in skin infection, of a 0.25 per cent solution each of methyl violet and methyl green in alcohol. In discussing the external remedies used in dermatoses, Bory points out that, in view of the richness of the epidermis in sulphur (2.48 per cent), it is no wonder that sulphur is one of the most important medicaments in dermatotherapy. He gives a formula for colloidal sulphur, prepared by boiling washed sulphur (0.20 Gm.) in glycerin (100 cc.) from three to five minutes (protected as much as possible against access of air), filtering while hot and then throwing it into distilled water 50 cc.). Bory is particularly fond of xylene, which he considers endowed with remarkable antiseptic and parasiticidal properties, as well as with stimulating qualities to epidermal reconstruction, in addition to being an excellent solvent. In superficial skin infections he employs from 0.5 to 1 per cent iodine dissolved in 10 per cent xylene, which is then incorporated in petrolatum or liquid petrolatum, the latter being used for applications to hairy parts. For the radical cure of sebaceous cysts he recommends a small incision to empty the contents after injection of a few drops of xylene. After reinjection of a few more drops to clean the cyst completely, a hot moist compress is applied to the flattened cyst. Clement Simon takes up general medication in dermatology. Sézary

contributes a practical exposition of the treatment of syphilis, which on the whole agrees with the methods employed in this country excepting that the French are more inclined than we to employ the subcutaneous or intramuscular injection of sulpharsphenamine, which, it is claimed, is better borne if dissolved in 4.7 per cent dextrose with 0.5 per cent phenol. The untoward effects of arsenotherapy are discussed by Flandin, while Gougerot takes up the prophylaxis of syphilis and Villaret the climatotherapy and balneotherapy. The treatment of cancer in general is the topic of Roussy. In the therapy of skin cancer, Schulmann emphasizes the treatment of precancerous lesions (such as nevi, xeroderma pigmentosum, Paget's and Bowen's disease, senile and presenile keratoses, arsenic and tar cancer, radiodermatitis, leukoplakia and erythroplakia) as well as the necessity for prompt and early treatment of actual cancers. He brings out strongly the curability of these lesions and the responsibility of the general practitioner in these cases. The book is concluded by Proust's short chapter on the therapy of internal cancers and articles by Peyre on experimental chemotherapy, Rubens-Duval on experimental biologic therapy of cancer, and Alajouanine on treatment of the pains of the cancer patient. It would indeed be desirable if such courses on therapy could be arranged for in this country to balance the other medical courses, which are generally deficient in therapeutics.

Calcium Metabolism and Calcium Therapy. By Abraham Cantarow, M.D., Instructor in Medicine, Jefferson Medical College. With a foreword by Hobart Amory Hare, B.Sc., M.D., LL.D. Second edition. Fabrikoid. Price, \$2.50. Pp. 252, with 3 illustrations. Philadelphia: Lea & Febiger, 1933.

The second edition of this valuable little book represents a distinctly successful attempt on the part of Dr. Cantarow to revise and supplement the material presented in the first edition. In order to keep pace with the numerous recent developments in the field of calcium metabolism and calcium therapy, a number of investigations which have shed light on certain controversial points have been embodied. The former belief that there exists an interrelationship between the action of the parathyroid hormone and that of vitamin D has been replaced by the view that these two substances act independently on calcium metabolism. Other new material presented in this edition includes the relation of the calcium and phosphorus intake to the effects of vitamin D and the parathyroid hormone; the nature of parathyroid action; the significance of phosphatases in the mechanism of ossification and in bone diseases; dental caries; the influence of calcium on the pharmacologic action of various drugs; and the in vivo diffusibility of calcium in nephritis with uremia and in parathyroid tetany. In view of the divergent current opinions regarding the etiology of dental caries, the author's apparent endorsement of the alleged definite relation between this obscure condition, calcium metabolism and vitamin D seems unwarranted. This book should prove particularly valuable to the clinician who desires a thorough and authoritative discussion of the values and limitations of calcium therapy.

Die Einteilung des Nervensystems nach seinen Leistungen. Von L. R. Müller, Professor der Inneren Medizin in Erlangen. Boards. Price, 6.80 marks. Pp. 74, with 21 illustrations. Leipzig: Georg Thieme, 1933.

An attempt at a functional analysis of the brain is made in this brief monograph. Müller recognizes three principal subdivisions of the nervous system: (1) *systema nervosum pro mundo*, the division that receives stimuli from and reacts on the environment; (2) *Systema nervosum myostaticum*, receiving impulses from the vestibular labyrinth and from the muscle joints and tendons and sending impulses to the muscles for the maintenance of equilibrium, posture and tonus; (3) *Systema nervosum vitale*, concerned with the afferent and efferent innervation of the viscera, blood vessels, glands and the smooth muscle of the hair follicles. On the afferent side these divisions include, respectively, Sherrington's exteroceptive, proprioceptive and interoceptive sensory fibers and their nuclei of reception. On the efferent side, Müller's divisions 1 and 2 include the somatic motor elements, and division 3 the visceral efferent elements. An adequate discussion of the relation of the higher centers in the brain to these three afferent and two efferent divisions would require a large volume, and when this is attempted in seventy-four pages the result is necessarily disappointing. The incompleteness of the analysis will be

evident from a glance at the three large colored drawings (figs. 1, 9 and 10) in which such important elements as the visual system, the vestibulospinal tract and the vagus nerves are omitted.

Papers Relating to the Pituitary Body, Hypothalamus and Parasympathetic Nervous System. By Harvey Cushing. Cloth. Price, \$5. Pp. 234, with 99 illustrations. Springfield, Ill.: Charles C. Thomas, 1932.

The publisher has incorporated four phases of Cushing's work in a beautifully printed and illustrated volume. Each section has formed the basis of an honorary lecture either at home or abroad and, being closely related, they form together a coherent volume. The first section deals with neurohypophyseal mechanisms from a clinical standpoint using the effects of hypophyseal tumors for the most part as evidence. Cushing believes that the hypophysis and diencephalon form a unit that functions as a whole. The next section concerns posterior pituitary hormone and the parasympathetic nervous system. Herein are reprinted the brilliant experiments concerned with observations on the effects of intraventricular injections of various drugs in conscious human beings. Cushing believes that a parasympathetic center resides in the diencephalon activated by posterior lobe secretion but that this secretion is itself under control by a neural mechanism situated in the tuber cinereum. The third section deals with pituitary basophilism, which Cushing clinically segregates from other obscure polyglandular syndromes. The author has adequate clinical evidence for a circumscribed syndrome and sufficient necropsy material for a firm conviction of its etiology. The last section is the most speculative and attempts to place the etiology of peptic ulcer on lesions of the diencephalon. The language in which the data are presented and the manner in which each subject is evolved into a firm argument make the book a literary as well as a scientific achievement. Even though some of the conclusions may not withstand the scrutiny of subsequent investigators, they form a source of stimulation to further work. The volume is recommended to all those interested in the nervous system and metabolic functions.

Handbuch der mikroskopischen Anatomie des Menschen. Herausgegeben von Wilhelm v. Möllendorff. Band V: Verdauungsapparat. Teil 2: Magen, Leber, Gallenwege. Bearbeitet von W. Pfuhl und H. Plenk. Paper. Price, 110 marks. Pp. 489, with 254 illustrations. Berlin: Julius Springer, 1932.

Plenk, in his admirable chapter on the stomach, acknowledges much help from the preliminary work done on it by Josef Lechner. Proceeding from the relations as found in man, he considers the homologies of the various regions of the stomach in different vertebrates, with particular emphasis on mammals. Such comparative data are essential for the interpretation of experimental work and help to differentiate fundamental from incidental conditions. Occasionally they illustrate general principles. Thus, the presence of striated muscle throughout the gastro-intestinal tract of certain fishes shows that the difference between smooth and striated muscle is essentially a physiologic and not a morphologic one. New data are presented on the histogenesis of the stomach in man and on its regenerative capacities. The critical discussion of the histophysiology of the cell types in the gastric glands is in agreement with the recent exposition by Bensley. The small number of normal human gastric mucous membranes that have been studied gives especial importance to the new material here described. The bibliography is as complete and as free from errors as could possibly be expected. Pfuhl, in his chapter on the liver, has omitted some important work, but he was confronted by a vast literature. His presentation is also essentially physiologic and has much that is new in it. A brief survey of the development is followed by a description of the lobulation and the evidence that this is the result of the postnatal equalizing of the vascular pressures in the arterial and venous channels which becomes necessary when respiration starts. There is a good presentation of the normal and experimental work on the organelles, the glycogen and the lipoids of the hepatic cell. The question is raised as to the effects of emotional states on these labile cells. The importance of postmortem changes is stressed. The incompleteness of many legends is annoying, for it is necessary to know the method of preparation and the lenses used in the study of cytologic material if one is to evaluate an illustration. The problems of the stellate cells are considered in all detail and there is a good account of the

histophysiology of the gallbladder. This handbook is indispensable for all histologists and pathologists, but at present there are few who can have the work on their own shelves. Its value and influence would unquestionably be increased if the price were reduced and in the long run the publishers would profit.

Anatomie humaine: Descriptive et topographique. Par H. Rouvière, professeur d'anatomie à la Faculté de médecine de Paris. Tome I: Tête, cou et tronc. (En deux fascicules.) Tome II: Membres, système nerveux central. Third edition. Cloth. Price, 400 francs per set. Pp. 1112, with 610 illustrations; 692, with 498 illustrations. Paris: Masson & Cie, 1932.

This edition of Rouvière's well known textbook of gross anatomy presents considerable changes. Certain chapters, particularly those dealing with the lymphatic and sympathetic nervous systems, have been entirely revised. More than a hundred new illustrations have been added, and the topographical anatomy of the abdominal wall has been completed by a brief description of the spinal and lumbo-iliac regions. Improvements in the presentation of some of the subjects has enabled the author to increase the size of the work no more than a hundred and thirty pages, in spite of the additional illustrations. Rouvière's Anatomy has always been a favorite French textbook for medical students, and for American students who prefer a French textbook this work is probably the most favorable one to recommend. The work remains as before, divided into three convenient volumes: one on the head and neck, one on the trunk, and one on the limbs. The illustrations are for the most part halftone reproductions on glossy paper, and the typography is excellent. The number and quality of the illustrations are probably superior to those of some of American textbooks.

The Purchase of Medical Care Through Fixed Periodic Payment. By Pierce Williams, of the Staff of the National Bureau of Economic Research, Inc. Assisted by Isabel C. Chamberlain. (Publications of the National Bureau of Economic Research, Inc., No. 20). Cloth. Price, \$3. Pp. 308. New York: National Bureau of Economic Research, Inc., 1932.

This is a compilation of the methods used, chiefly by railroads and various lumber and mining industries, to provide medical care for employees at fixed periodic payments. It is useful as showing the extent to which contract practice has been carried in many sections of the United States. Although the author makes specific reference to many organizations using various types of contract practice methods, he omits specific reference in many places where they would be most helpful. No reference is made to the quality of medical care given the employees or members of contract covered groups. The general tone of the report leads the reader to assume that there is no question as to the quality of medical service. The organization and administration of these fixed payment plans is described in a very favorable tone and omits any criticism or analysis of the dangerous and undesirable features. The general tone of the work gives one the impression that the purpose is to defend the fixed periodic payment method and to convert the reader to the support of such plans.

Les séquelles de l'encéphalite épidémique: Etude clinique et thérapeutique. Par Georges Guillaud, professeur de clinique des maladies du système nerveux à la Faculté de médecine de Paris, et Pierre Mollaret, chef de clinique à la Faculté de médecine de Paris. La pratique médicale illustrée. Directeurs, Professeurs E. Sergent, R. Mignot et R. Turpin. Paper. Price, 28 francs. Pp. 106, with 21 illustrations. Paris: G. Doin & Cie, 1932.

This monograph on the late stages of epidemic encephalitis belongs in the large series known as "La pratique médicale illustrée" edited by Sergent, Mignot and Turpin. It is based on the extensive personal experience of the authors and on quite complete study of the literature, both French and foreign. There are chapters on the parkinsonian syndrome, dystonias, abnormal movements, sensory disturbances, vegetative disorders, psychic disorders, clinical forms, diagnosis and treatment. Each subject is necessarily treated in a condensed manner but with only few omissions of data of any importance, as, for instance, when it is stated (page 64) that modifications of basal metabolism have not been observed in the various post-encephalitic syndromes, though decided modifications were observed in twenty-eight of forty-seven cases reported from America by Naccarati in 1926. The book deals entirely with the clinical side, including treatment; the pathology is not discussed.

A Manual of Bacteriology, Medical and Applied. By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H., Director of Pathology, Seamen's Hospital, Greenwich, and James McIntosh, M.D., B.Ch., Professor of Pathology, University of London. Ninth edition. Cloth. Price, 18s. Pp. 746, with 109 illustrations. London: J. & A. Churchill, 1932.

The authors, in this revision, have effectively incorporated the newer concepts in the field of pathogenic microbiology. They present many topics of a wide range of interest, which is made possible only by the concise but pleasantly readable style; numerous well chosen references indicate direction for further study. On the other hand, material is selected, as problems of general biologic interest are only briefly discussed or are omitted. The action of the infectious agent is frequently correlated with the pathologic process in the host, and laboratory procedures and methods of bacterial identification are well described. The illustrations leave little to be desired in presenting microscopic forms both in culture and in pathologic material. The book is admirably suited for a textbook for the student in pathogenic bacteriology and parasitology, and its few faults are attributable to brevity.

Medicolegal

Negligence of Sanipractor in Treating Fracture

(Sears v. Lydon, Sears et ux. v. Lydon (Wash.), 13 P. (2d) 475)

The defendant, a licensed sanipractor, attended Mrs. Sears in labor. Twins were born. The second child descended in a transverse presentation, the left arm preceding the head and trunk. After several unsuccessful attempts to replace the arm and shift the fetal body, the defendant sanipractor effected delivery by pulling on the protruding arm, but the arm was broken in the procedure. The sanipractor's treatment of the fracture was unsuccessful, blood poisoning set in, and later, to save the baby's life, a physician amputated the arm near the shoulder.

Two suits for malpractice were brought against the defendant, one by the child's guardian ad litem and one by the parents, but both suits were consolidated for trial. The complaints in both cases charged negligence in the treatment of the fracture, but were silent concerning the manner of delivery and the breaking of the arm. They alleged that the defendant bound the arm so tightly with nonelastic adhesive tape as to prevent the circulation of the blood and that he thereafter negligently failed to inspect and loosen the bandages, as a result of which blood poison developed. The plaintiffs introduced evidence that the condition of the baby's fingers and hand grew steadily worse after the fracture was set. After nine days the condition became so alarming that the defendant sanipractor, after removing a part of the bandages, advised that the baby be taken to a hospital. A physician testified that he examined the baby at the hospital and found, on removing the bandages, that the arm had been bound so tightly that three splints made of tongue depressors had sunk into the flesh and left distinct marks when removed; that the arm was then dead from about two or three inches below the shoulder downward; that gangrene had set in, and that an amputation was necessary to save the child's life. The defendant insisted that he had wrapped the arm in antiseptic gauze and cotton and bound pieces of yucca board around it to hold the arm in normal position, that he had not used tongue depressors, and that the bandages had been tampered with by the parents. He asserted that on several visits he noticed that the wrappings had been altered but said nothing to the parents about it; that from the beginning the fingers showed blue spots about the nails and that as the days passed these marks turned to gray, indicating an improvement in circulation. The jury returned verdicts for the plaintiffs, and the sanipractor appealed to the Supreme Court of Washington.

The defendant sanipractor assigned error in an instruction given the jury in which it was told that if a physician holds himself out as having special knowledge or skill in the reduction and treatment of fractures, then he is required to possess that knowledge and degree of skill usually possessed by specialists in that line of practice, in the same or similar communities, and that if he fails to possess that knowledge and skill, or if,

possessing it, he fails to exercise it with reasonable care, he is guilty of negligence. The defendant contended that this instruction assumed that he was to be judged as to his qualifications as a specialist without regard to the school of healing to which he belonged, and that it assumed also that he held himself out as a specialist in the reduction of fractures. The general rule for which the defendant contends, said the Supreme Court, is no doubt correct, but here the defendant testified that he was an expert in bone surgery and that he so represented himself to the child's father at the time of undertaking to reduce the fracture. He further testified that the method he employed was the one followed by "the schools generally of practitioners in the general practice" and advocated by standard written authority. There was no evidence that the defendant in reducing the fracture employed a method peculiar to his own school of healing or different from that employed by physicians in general practice. Under the evidence, the instruction was proper.

The defendant further complained that the trial court refused to instruct the jury to limit the damages to the result of negligence in binding the arm too tightly and not giving it proper treatment and to exclude any recovery for injury resulting from the manner in which he effected the transverse delivery. Under the pleading, said the Supreme Court, and under the evidence introduced by the plaintiffs, such an instruction would have been entirely proper, to prevent confusing the jury as to the exact issues before it. The plaintiffs did not claim, nor introduce evidence to prove, that the defendant was liable for the original fracture. But the defendant himself, not content with the limited issues so presented, sought to fortify his position by advancing a theory that contained the germ of an additional issue, namely, that of original negligence in the delivery, causing the fracture of the arm. He testified that the fracture could not possibly have been avoided. The plaintiffs accepted the challenge the defendant himself thus offered them, and on cross-examination and in rebuttal, they adduced evidence from which the jury was reasonably entitled to infer that the negligence of the defendant preceded the attempted reduction of the fracture and lay in the manner of delivery. All this evidence, on both sides, went to the jury wholly without objection. The defendant having invited the contest on a new field—in fact, having chosen the ground himself—cannot be heard to say that the jury should not have been allowed to determine that issue. Had the plaintiffs themselves attempted to open that field of inquiry, an objection by the defendant would have been properly sustained, but the defendant cannot on the one hand erect a barrier of defense and on another brush it aside. The defendant's contention, if followed to its logical conclusion, would enable a defendant to admit or to establish a distinct act of negligence on his part, other than that with which the plaintiff charged him, and then to escape the consequences of that negligence on the ground that it had not been specifically alleged by the plaintiff. To permit such a course of procedure would be unreasonable and unjust.

For the reasons stated above, the judgments in favor of the plaintiffs were affirmed.

Workmen's Compensation Acts: Injury Aggravated by Disregard of Physician's Advice.—A workman injured in the course of his employment, says the Supreme Court of South Dakota, cannot recover compensation for an increase of disability, due to his failure to use ordinary care to avoid aggravating the injury. An injury aggravated or extended in time by the employee's neglect or disobedience of his physician's instructions is not compensable as to the additional period of disability. Here an employee suffered an injury to his back. He was taken to a hospital and left on the fifth day without the permission of his attending physician. The physician advised him to wear a brace and to have a certain operation performed on his back. He would not consent to the operation and did not wear the brace. At various times he did heavy work, went to dances and became intoxicated. Physicians who had examined the employee were of the opinion that the employee by his conduct and by his disregard of advice and instructions had probably aggravated his injury and that had he obeyed his physician's instructions he probably would have been cured by the time of the hearing.—*Detling v. Tessier (S. D.)*, 244 N. W. 538.

Society Proceedings

COMING MEETINGS

- American Medical Association, Milwaukee, June 12-16. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.
- American Academy of Pediatrics, Chicago, June 12-13. Dr. Clifford G. Grulee, 636 Church Street, Evanston, Ill., Secretary.
- American Association for the Study of Goiter, Memphis, Tenn., May 15-17. Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Ind., Secretary.
- American Association for the Study of the Feeble-Minded, Boston, May 31-June 3. Dr. Groves B. Smith, Beverly Farms, Godfrey, Ill., Secretary.
- American Association for Thoracic Surgery, Washington, D. C., May 9-11. Dr. Duff S. Allen, 3720 Washington Boulevard, St. Louis, Secretary.
- American Association of Genito-Urinary Surgeons, Washington, D. C., May 8-10. Dr. Henry L. Sanford, 1621 Euclid Avenue, Cleveland, Secretary.
- American Association of Medical Milk Commissions, Milwaukee, June 12-13. Dr. Harris Moak, 360 Park Place, Brooklyn, Secretary.
- American Association of Pathologists and Bacteriologists, Washington, D. C., May 2-3. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.
- American Bronchoscopic Society, Washington, D. C., May 10. Dr. Edwin McGinnis, 104 South Michigan Boulevard, Chicago, Secretary.
- American Climatological and Clinical Association, Washington, D. C., May 9-10. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Massachusetts, Secretary.
- American Dermatological Association, Chicago, June 8-10. Dr. W. H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.
- American Gastro-Enterological Association, Washington, D. C., May 8-9. Dr. John Bryant, 311 Beacon Street, Boston, Acting Secretary.
- American Gynecological Society, Washington, D. C., May 8-10. Dr. Otto H. Schwarz, 630 South Kingshighway, St. Louis, Secretary.
- American Laryngological Association, Washington, D. C., May 9-10. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otolological Society, Chicago, June 8-10. Dr. Robert L. Loughran, 33 East 63d Street, New York, Secretary.
- American Neurological Association, Washington, D. C., May 9-11. Dr. Henry A. Riley, 117 East 72d Street, New York, Secretary.
- American Ophthalmological Society, Washington, D. C., May 8-10. Dr. J. Milton Griscom, 2213 Walnut Street, Philadelphia, Secretary.
- American Orthopedic Association, Washington, D. C., May 8-10. Dr. DeForest P. Willard, 1916 Spruce Street, Philadelphia, Secretary.
- American Otolological Society, Washington, D. C., May 8-9. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.
- American Pediatric Society, Washington, D. C., May 8-10. Dr. Hugh McCulloch, 325 North Euclid Avenue, St. Louis, Secretary.
- American Proctologic Society, Chicago, June 12-13. Dr. Frank G. Runyeon, 1361 Perkiomen Avenue, Reading, Pa., Secretary.
- American Psychiatric Association, Boston, May 29-June 2. Dr. Clarence O. Cheney, 722 West 168th Street, New York, Secretary.
- American Society for Clinical Investigation, Washington, D. C., May 8. Dr. H. L. Blumgart, Beth Israel Hospital, Boston, Secretary.
- American Society of Clinical Pathologists, Milwaukee, June 9-12. Dr. A. S. Giordano, 531 North Main Street, South Bend, Ind., Secretary.
- American Surgical Association, Washington, D. C., May 8-10. Dr. Vernon C. David, 59 East Madison Street, Chicago, Secretary.
- American Urological Association, Chicago, June 20-22. Dr. Gilbert J. Thomas, 1009 Nicollet Avenue, Minneapolis, Secretary.
- Arkansas Medical Society, Hot Springs, May 2-4. Dr. William R. Bathurst, 213 West Second Street, Little Rock, Secretary.
- Association for the Study of Allergy, Milwaukee, June 12-13. Dr. Warren T. Vaughan, 808 Professional Building, Richmond, Va., Secretary.
- Association for the Study of Internal Secretions, Milwaukee, June 12-13. Dr. F. M. Pottenger, 1930 Wilshire Boulevard, Los Angeles, Secretary.
- Association of American Physicians, Washington, D. C., May 9-10. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.
- Conference of State and Provincial Health Authorities, Washington, D. C., June 5-6. Dr. A. J. Chesley, State Department of Health, St. Paul, Secretary.
- Congress of Physicians and Surgeons of North America, Washington, D. C., May 9-10. Dr. John T. King, Jr., 1210 Eutaw Place, Baltimore, Secretary.
- Connecticut State Medical Society, Hartford, May 24-25. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Florida Medical Association, Hollywood, May 2-4. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.
- Georgia, Medical Association of, Macon, May 9-12. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.
- Illinois State Medical Society, Peoria, May 16-18. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.
- Iowa State Medical Society, Des Moines, May 10-12. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.
- Kansas Medical Society, Lawrence, May 2-4. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.
- Massachusetts Medical Society, Boston, June 5-7. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.
- Medical Library Association, Chicago, June 19-21. Miss Marjorie J. Darrach, 645 Mullett Street, Detroit, Secretary.
- Medical Women's National Association, Milwaukee, June 11-12. Dr. Inez A. Bentley, 45 Gramercy Park, New York, Secretary.
- Minnesota State Medical Association, Rochester, May 22-24. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.
- Mississippi State Medical Association, Jackson, May 9-11. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Kansas City, May 1-4. Dr. E. J. Goodwin, 634 North Grand Boulevard, St. Louis, Secretary.
- Nebraska State Medical Association, Omaha, May 23-25. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Manchester, May 16-17. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 6-9. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.
Oklahoma State Medical Association, Oklahoma City, May 15-17. Dr. C. A. Thompson, Commercial National Bank Building, Muskogee, Secretary.
Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 167 Angell Street, Providence, Secretary.
Society for the Study of Asthma and Allied Conditions, Washington, D. C., May 6. Dr. W. C. Spain, 116 East 53d Street, New York, Secretary.
South Dakota State Medical Association, Huron, May 15-17. Dr. John F. D. Cook, Langford, Secretary.
Texas, State Medical Association of, Fort Worth, May 8-11. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.
West Virginia State Medical Association, Charleston, May 22-24. Mr. Joe W. Savage, Professional Building, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

45:1-228 (Jan.) 1933

- *Intestinal Infections in Infants. Marion M. Johnston, A. Brown, F. F. Tisdall and D. T. Fraser, Toronto, Canada.—p. 1.
- Raw Apple Diet in Treatment of Diarrheal Conditions in Children. T. L. Birnberg, St. Paul.—p. 18.
- Asthma in Children: Analysis of Eighty-Four Cases. R. Chobot, New York.—p. 25.
- *Chemical Action of Sodium Citrate as Cause of Certain Transfusion Reactions. A. S. Minot, Katharine Dodd and R. Bryan, Nashville, Tenn.—p. 32.
- *Urea Clearance in Normal and in Dehydrated Infants: Renal Function in Intestinal Intoxication. L. Schoenthal, Dorothy Lurie and Margaret Kelly, New York.—p. 41.
- Enteral Administration of Scarlatinal Filtrate Toxin. Jean V. Cooke, St. Louis.—p. 54.
- *Results Obtained from Use of Various Tuberculin Tests. E. Friedman, M. H. Black and A. L. Esserman, Denver.—p. 58.
- Efficiency of New Orleans Sunshine in Preventing Rickets in Rats. H. Laurens and H. S. Mayerson, New Orleans.—p. 66.
- Effect of Sunshine Through Window Glass and Fresh Air on Resistance to Infection: Experiments on Animals. J. R. Ross, Elizabeth Chant Robertson and F. F. Tisdall, Toronto, Canada.—p. 81.
- Effects of Cod Liver Oil-Skimmed Milk Feeding on Bones of Infants. H. E. Irish, Chicago.—p. 96.

Intestinal Infections in Infants.—To test the validity of the various hypotheses as to the cause of acute intestinal intoxication, Johnston and her associates subjected 172 infants with acute intestinal intoxication or related diagnosis and 107 controls to a clinical investigation as well as a bacteriologic survey of the flora of the upper respiratory and gastro-intestinal tracts. Although evidence of late involvement of the middle ear developed in 63 per cent of the patients, there was similar involvement in more than 60 per cent of the controls who showed no evidence of acute intestinal intoxication. Hemolytic streptococci were rarely isolated from the ear, nose and throat in the patients either during life or post mortem. Hemolytic streptococci were isolated more frequently from controls both during life and post mortem, although these showed no symptoms suggestive of acute intestinal intoxication. Evidence was found bacteriologically or serologically of infection with pathogenic micro-organisms of the colon-paratyphoid-dysentery group. The authors conclude that acute intestinal intoxication is not caused by masked mastoid infection. Acute intestinal intoxication, fermentative diarrhea, infectious diarrhea, dysentery and summer diarrhea are synonyms indicating one condition—a gastro-intestinal infection with species of the colon-paratyphoid-dysentery group of bacilli.

Chemical Action of Sodium Citrate.—According to Minot and his associates, infants with certain chemical abnormalities of the blood may be harmed rather than benefited by transfusions of citrated blood even when no incompatibility or allergy can be demonstrated. Considerable evidence that

the introduction of sodium citrate is the cause of the trouble has been obtained from experiments on animals. Unfavorable reactions have been produced in dogs with low values for blood calcium, with increased guanidine in the blood and with alkalosis by the introduction of an ordinary citrated transfusion or of similar amounts of sodium citrate in saline solution. Though no symptoms of reaction were produced by the injection of equal amounts into normal control animals, the same effect could be produced by much larger doses of citrate. The reaction is typical of an acute lack of calcium and is relieved or prevented by the administration of calcium salts. The results indicate the importance of readjustment of abnormal chemical conditions of the blood before giving citrate transfusions. The authors present the case of an infant in which death followed the transfusion of citrated blood.

Urea Clearance in Infants.—Schoenthal and his associates observed that the urea clearance of nine normal infants corrected for surface area agreed with the values observed by van Slyke and his co-workers and Addis and his collaborators for older children and adults. This would indicate that renal function measured by the ability to excrete urea is as well developed in infants as in later life. In infants suffering from severe diarrhea and vomiting (intestinal intoxication), the urea clearance is often greatly reduced. In the absence of pathologic-anatomic lesions of the kidneys, dehydration and its concomitant effects on body fluids and renal tissue are considered to be the most important factors leading to a reduced urea clearance. The authors conclude that similar observations could be made in other diseases in which dehydration is a prominent symptom. In pyloric stenosis, intestinal obstruction, acute and chronic nephritis, so-called pyelitis and diabetes mellitus, dehydration and oliguria often are pronounced, and an increase in nonprotein and urea nitrogen is frequently observed. It is possible that in these conditions, which are characterized by excessive loss of water from the body (prerenal deviation), the urea clearance may be diminished, and the mechanism of decreased renal function may be analogous to that present in intestinal intoxication.

Results from Various Tuberculin Tests.—Friedman and his associates subjected fifty-five children, chiefly of the preventorium type, with a generous admixture of active bone and pulmonary disturbances, ranging in age from 4 to 17 years and equally divided between the sexes, within a relatively short period to the application of the Mantoux, "single puncture," Pirquet, "multiple puncture" and percutaneous tests. Their study of the various diagnostic tuberculin cutaneous tests, performed with scrupulous regard for details, demonstrated the utter unreliability of the Pirquet and the modified Moro tests. It failed to substantiate the claims advanced by other observers for the "multiple puncture" method. Their study, in their opinion, demonstrated the superiority of the Mantoux and "single puncture" technic. The recommendation appears warranted that these two tests supersede the others. They conclude that for routine office and bedside work the "single puncture method" may be given precedence, because it is easier to perform, is less time consuming, eliminates the necessity for dilution and refrigeration, is less expensive and, withal, yields results as accurate as those obtained by the well established Mantoux test.

American Journal of Hygiene, Baltimore

17:1-296 (Jan.) 1933

- Study of Malarial Relapses in United States Army. W. B. Borden, Washington, D. C.—p. 1.
- Controlled Technic for Employment of Naturally Induced Malaria in Therapy of Paresis. M. F. Boyd, Tallahassee, Fla., and W. K. Stratman-Thomas, Jacksonville, Fla.—p. 37.
- Studies on Benign Tertian Malaria: I. On Occurrence of Acquired Tolerance to Plasmodium Vivax. M. F. Boyd, Tallahassee, Fla., and W. K. Stratman-Thomas, Jacksonville, Fla.—p. 55.
- Effects of Vitamins A and D on Antibody Production and Resistance to Infection. Meridian Ruth Greene, Baltimore.—p. 60.
- Comparative Study of Antipneumococcus Serum Containing Heterophile Antibody. H. M. Powell, W. A. Jamieson, G. H. Bailey and R. R. Hyde, Baltimore.—p. 102.
- Acute Minor Respiratory Diseases Prevailing in Group of Families Residing in Baltimore, Md., 1928-1930: Prevalence, Distribution and Clinical Description of Observed Cases. V. A. Van Volkenburgh and W. H. Frost, Baltimore.—p. 122.
- Cytotropic Viruses, with References to Filtrable Forms of Bacteria and Cancer. E. W. Goodpasture, Nashville, Tenn.—p. 154.

- Quantitative Experimental Studies on Rat Nematode *Heterakis Spumosa* Schneider, 1866. G. F. Winfield, Baltimore.—p. 168.
- *Bacteriologic Studies of Milk-Borne Outbreak of Scarlet Fever. H. Welch and F. L. Mickle, Hartford, Conn.—p. 229.
- Further Outbreaks of Botulism in Rocky Mountain Region. I. C. Hall, Denver.—p. 235.
- Effect of Blood Loss on Resistance of Chickens to Variable Degrees of Parasitism. D. A. Porter and J. E. Ackert, Manhattan, Kan.—p. 252.
- Studies on *Ichthyophonus Hoferi*, Parasitic Fungus of Herring, *Clupea harengus*: I. Parasite as It Is Found in Herring. G. E. Daniel, Baltimore.—p. 262.
- Role of Lipoids in Forssman Antigens. M. Armangué, P. Gonzalez and Sara Romero, Barcelona, Spain.—p. 277.
- *Heptylresorcinol in Treatment of Hookworm Infection. N. A. David and H. G. Johnstone, San Francisco.—p. 287.

Milk-Borne Outbreak of Scarlet Fever.—In February, 1932, there occurred near Hartford, Conn., an outbreak of scarlet fever and septic sore throat. The epidemiologic evidence indicated that it was milk borne and accordingly Welch and Mickle made bacteriologic studies of the patients and of the herd apparently involved. Organisms isolated from these patients with scarlet fever and sore throat were found to give the characteristics of *Streptococcus scarlatinae*. This classification was subsequently confirmed by serologic studies in another laboratory. Two milk handlers, operating a dairy connected with the outbreak by epidemiologic data, harbored in their throats organisms identical in every respect with those isolated from the clinical cases. The authors' studies indicate that the presence of a distinct capsule on a beta hemolytic streptococcus is not sufficient evidence that the organism is *Streptococcus epidemicus* without further studies on its cultural, biochemical and serologic properties. They also present experimental evidence which indicates that the classification of streptococci on the basis of the type of lesion produced in the animal body is a questionable procedure. It is probable that the course of the infection is subject, in addition to the type of organism involved, to one or both of the following determining factors: 1. Fluctuation or variation in the virulence of different cultures of the same organism. 2. Variation in the individual resistances of the experimental animals, whether due to environmental or to hereditary causes.

Heptylresorcinol in Treatment of Hookworm.—David and Johnstone review the literature and present thirteen cases of hookworm infestation treated with heptylresorcinol. Of these, the six patients who were previously treated over a considerable period of time with olive oil solutions of the drug were unaffected; of the seven receiving the crystalline drug in plain gelatin capsules, two were cleared. Of the ten patients who later received phenyl salicylate coated capsules of the drug, eight were cured. One case of ascariasis was cured by heptylresorcinol in olive oil, but one case of trichuris infestation did not respond to a single treatment of heptylresorcinol in capsules coated with phenyl salicylate. The authors conclude that better results seem to be obtained when precautions are taken to delay or prevent the absorption of heptylresorcinol. Although only a few of their cases compare with Brown's study on the effectiveness of hexylresorcinol in hookworm infestation, the observations indicate that heptylresorcinol is not as satisfactory as hexylresorcinol for hookworm infestation.

American Review of Tuberculosis, New York

27:1-120 (Jan.) 1933

- Fixity of Attenuation of BCG. A. Calmette, Paris, France.—p. 1.
- Protection Against Tuberculosis with BCG in Guinea-Pigs. K. E. Birkhaug, Rochester, N. Y.—p. 6.
- Tuberculosis and Leukemia. R. H. Jaffé, Chicago.—p. 32.
- Benign Pulmonary Tuberculosis with Diabetes. H. Wessler and H. Hennell, New York.—p. 47.
- Congenital Cystic Disease of Lung. W. C. Pollock and H. P. Marvin, Denver.—p. 59.
- *Spontaneous Pneumothorax with Acute Abdominal Symptoms: Report of Case. W. R. Oechsl and Jane Skillen, Olive View, Calif.—p. 67.
- *Fluoroscopy in Tuberculosis Case Finding. H. W. Hetherington and E. W. Flahiff, Philadelphia.—p. 71.
- The Tuberculosis Trained Nurse. J. Walsh, White Haven, Pa.—p. 81.
- *Costa and Red Cell Sedimentation Reactions in Laryngeal Tuberculosis: Comparative Study. C. L. Rubenstein, Duarte, Calif.—p. 92.
- *Protest Against Current Conception of Activity in Pulmonary Tuberculosis. L. H. Fales, Livermore, Calif.—p. 101.

Spontaneous Pneumothorax.—Oechsl and Skillen present a case of spontaneous pneumothorax, in a woman, aged 25, which constitutes one of the more uncommon exceptions to the rule, in that the predominating symptoms were gastro-intestinal (abdominal pain, nausea and vomiting), and dyspnea was prac-

tically absent. The authors feel that this variation from the usual symptom complex is probably explained by the fact that the direction of greatest displacement of viscera was downward, with consequent embarrassment of the diaphragm. The heart and mediastinum were moderately displaced, but apparently not sufficiently to cause dyspnea.

Fluoroscopy in Tuberculosis.—Hetherington and Flahiff compare the results of the examination of 347 young adults with the fluoroscope and with stereoscopic roentgenograms. They observed that the fluoroscope fails to reveal a considerable part of the calcified nodules of lungs and lymph nodes visible in roentgenograms. Tuberculous infiltration limited to the apex of the lung above the clavicle is seldom recognizable by fluoroscopic examination. Apical infiltration extending below the clavicle is usually recognizable with the fluoroscope but may be overlooked. The fluoroscope may be used to detect the more extensive and therefore probably the more significant pulmonary lesions, but when fluoroscopic examination does not reveal any pulmonary abnormality the possibility of a significant tuberculous lesion cannot be excluded. Fluoroscopy affords a relatively inexpensive method of selecting children who on further examination will be found to need treatment or prophylactic care for tuberculosis. Lesions suspected with the fluoroscope should always be confirmed by roentgenograms.

Costa and Red Cell Sedimentation Reactions.—An evaluation of the Costa reaction, as modified by Schwartz and the author, and a comparison with the red cell sedimentation reaction are presented by Rubenstein. The material he used for his study was seventy-five cases of pulmonary tuberculosis complicated by laryngeal tuberculosis. He points out that, before instituting any radical form of treatment, it is highly important that the phthisiologist secure accurate data regarding the patient's pulmonary process and his immunobiologic status. The author recommends the Costa reaction as a determinant of pulmonary activity, in addition to the sedimentation reaction. The Costa and sedimentation reactions disclosed a complete parallelism in cases of far advanced disease. In latent cases and those with moderately advanced disease there was a disparity between the two reactions that favored the Costa reaction in sensitivity. Both reactions were found to be of value in differential diagnosis between simple and tuberculous laryngitis. Tuberculosis of the larynx widens the indications for chest surgery, which, when applied at the proper immunobiologic phase, is a most powerful weapon in effecting a complete cure of laryngeal tuberculosis. It is his opinion that the Costa reaction may be employed profitably in the laryngeal tuberculosis clinic as an objective method for decision as to activity, and as a guide in the treatment to be employed.

Activity in Pulmonary Tuberculosis.—According to Fales, the idea as to what constitutes activity in pulmonary tuberculosis has not kept pace with other advances in knowledge. Although the presence of constitutional symptoms may be considered a manifestation of activity, one must not conclude that the absence of constitutional symptoms means no activity. The old conception, therefore, that activity is determined by the presence of constitutional symptoms, should be discarded as unreliable. The most exact method at one's disposal is to consider activity in terms of the anatomopathologic changes that occur in the lungs. In certain types of tuberculosis, of which the childhood and the secondary tuberculosis of adults are examples, early diagnosis can be made only by the roentgen ray, as physical observations are usually absent and constitutional symptoms, if present, are so slight that they are usually overlooked. It follows that groups of signs and symptoms as diagnostic criteria for the diagnosis of active pulmonary tuberculosis, although a step in advance at the time, have greatly lost their usefulness. If such groups of criteria are to be used in the future, the roentgen ray must receive the place of prominence in such a scheme. In short, positive roentgenograms unaccompanied by other criteria must be considered of sufficient evidence to diagnose active pulmonary tuberculosis. Comparison of serial roentgenograms taken at certain specified intervals should be considered the method of precision in determining activity in pulmonary tuberculosis. Cases should be deemed active as long as comparative roentgenograms show progression or retrogression of the pathologic lesion, and arrested only after a lesion has remained stable for months under capable roentgenographic control.

Annals of Surgery, Philadelphia

96: 801-960 (Nov.) 1932

- *Splenectomy in Purpura Hemorrhagica. E. L. Eliason and L. K. Ferguson, Philadelphia.—p. 801.
- Tumors of Sternum: Report of Removal of Large Mediastinal Sternal Chondromyxoma. G. J. Heuer, Cincinnati.—p. 830.
- Surgical Treatment of Mediastinal Tumors: Removal of Cystic Azygos Lobe from Posterior Mediastinum. S. W. Harrington, Rochester, Minn.—p. 843.
- Cancer Problem in General Hospital. H. L. Foss, Danville, Pa.—p. 857.
- Temporary Bilateral Abductor Paralysis Without Nerve Injury and Tetany Following Thyroidectomy. H. A. Bruce, Toronto, Canada.—p. 864.
- Results Obtained in Treatment of Raynaud's Disease by Sympathetic Neurectomy and in Thrombo-Angiitis Obliterans by Desensitization of Peripheral Sensory Nerves. A. W. Allen, Boston.—p. 867.
- *Results of Operative Treatment of Cancer of Breast. F. S. Mathews, New York.—p. 871.
- When Should Irradiation with Radium or Roentgen Ray Precede Operation or Be Employed Without Operation? J. C. Bloodgood, Baltimore.—p. 882.
- Inoperable and Malignant Tumors. W. Meyer, New York.—p. 891.
- Ulceration of Aberrant Gastric Mucosa in Meckel's Diverticulum: Source of Intestinal Hemorrhage. J. M. Mason and G. S. Graham, Birmingham, Ala.—p. 893.
- Clinical Aspects and Treatment of Primary Lymphosarcoma of Stomach and Intestines. D. Cheever, Boston.—p. 911.
- *Fate of Obstructed Loop in Intestinal Obstruction Following an Anastomosis Around Obstruction Without Resection. W. L. Estes, Jr., and C. E. Holm, Bethlehem, Pa.—p. 924.
- Magots and Osteomyelitis. W. Martin and W. G. Heeks, New York.—p. 930.
- Fracture of Neck of Femur: Clinical Criteria in Prognosis. K. Speed, Chicago.—p. 951.

Splenectomy in Purpura Hemorrhagica.—In order to have some basis on which to judge the results and dangers of splenectomy in purpura hemorrhagica, Eliason and Ferguson collected and analyzed the 208 cases reported in the literature and add five unreported cases of their own. A review of the literature points to the fact that purpura hemorrhagica is a disease causing not only a reduction of blood platelets but also a disturbance of the entire reticulo-endothelial system. It has not yet been proved that the spleen is the organ at fault in purpura hemorrhagica. A definitely established diagnosis must be made before splenectomy should be considered. Once the diagnosis is established, the therapeutic indications appear to be (1) the control of the hemorrhage and (2) the removal of the etiologic factors. Splenectomy appears to be the most effective method of controlling extensive hemorrhage in purpura hemorrhagica of either the acute or the recurring type. Early operation and adequate preparation of the patient by transfusion is imperative. Removal of foci of infection is the best prophylaxis against recurrences. The operative mortality for the whole group was 13.1 per cent, but for the cases reported in the last four years the mortality was 7.08 per cent in 113 cases. In acute purpura there were thirty-five cases treated by splenectomy with twelve deaths, 34.3 per cent. In the last twenty-two cases there were only three deaths, 13.6 per cent. In the chronic purpura there were 160 cases with eleven deaths, 7 per cent. In eighteen of the twenty-eight cases the cause of death appeared to be postoperative shock in a poor risk patient; less frequently, intracranial hemorrhage, operative accidents or postoperative complications, or incorrect diagnoses.

Results of Operative Treatment of Cancer of Breast.—Mathews presents a series of 218 unselected cases of carcinoma of the breast that have been submitted to operation. In 67 per cent the axillary nodes were involved. In thirteen patients the operation is recorded as incomplete, and in several others supraclavicular glands were involved. Of the patients operated on over ten years ago 23.9 per cent survived the ten-year period, and some of these are now living from ten to nineteen years from the date of operation. In a series of patients, which includes a number not usually classed as operable, 37.8 per cent have passed the five-year period. The results compare favorably with those of well known operating surgeons and seem as good as the results of those who largely replace surgery by irradiation. The author has no intention to replace operative surgery in operable cases by any form of radiation but hopes to continue the operative treatment with as much aid from radiation as the methods now in use or to be developed may offer.

Obstructed Loop in Intestinal Obstruction.—Estes and Holm state that, following an entero-anastomosis around a mass of intestinal adhesions, uneventful recovery is to be anticipated unless intestinal obstruction in the adherent coils persists or

recurs. If the obstruction persists or recurs there will follow an ulcerative enteritis and dilatation of the obstructed loops, which may lead to a general enterocolitis evidenced by diarrhea, visible peristalsis and borborygmus. Resection of the sidetracked ulcerated intestine will be necessary. Entero-anastomosis for intestinal obstruction must be looked on as a possible first stage operation of which resection of the obstructed loops may be required as a second stage. No matter whether the anastomosis is an ileo-ileostomy or an ileocolostomy, in the presence of obstruction the ulceration will occur. That the obstruction and subsequent stagnation play the major part in the cause of the ulceration seems proved by the fact that clinically and experimentally in a blind loop of intestine left distal to an anastomosis a similar ulceration will be produced; in other words, if the obstruction in the sidetracked intestine remains, it acts like a blind loop left distal to a lateral anastomosis. In the presence of acute obstruction it would be unwise to consider primary resection of the obstructing coils unless gangrenous, but if at the time of lateral anastomosis it is certain that the obstruction in the adherent area remains, the two stage operation must be definitely planned.

Archives of Internal Medicine, Chicago

51: 1-172 (Jan.) 1933

- Syndrome of Anemia, Glossitis and Dysphagia: Report of Eight Cases, with Especial Reference to Observations at Autopsy in One Instance. M. M. Suzman, London, England.—p. 1.
- *Blood Cholesterol in Thyroid Disease: I. Analysis of Findings in Toxic and Nontoxic Goiter Before Treatment. L. M. Hurxthal, Boston.—p. 22.
- *Intravenous Pressure: I. New Method of Determination. W. A. Brams, L. N. Katz and W. J. Schutz, Chicago.—p. 33.
- Transient Methemoglobinemia Due to Ammonium Nitrate. L. Tarr, New York.—p. 38.
- Endemic Nutritional Edema: II. Serum Proteins and Nitrogen Balance. J. B. Youmans, A. Bell, Dorothy Donley and Helen Frank, Nashville, Tenn.—p. 45.
- *Detection of Murmur of Acute Pericarditis: Description of New Clinical Procedure. H. N. Segall, Montreal, Canada.—p. 62.
- *Acute Leukemia Following Lymphosarcoma. K. Kato and A. Brunschwig, Chicago.—p. 77.
- Toxicity of Purified Bile Preparations: III. Influence on Cardiovascular Responses. F. A. Ries and E. U. Still, Baltimore.—p. 90.
- Splenectomy in Sickle Cell Anemia: Report of Case with Necropsy in Adult on Whom Splenectomy Was Attempted. R. E. Ching and L. W. Diggs, Memphis, Tenn.—p. 100.
- Nourishment of Myocardium Through Thebesian Vessels in a Heart in Which the Large Coronary Arteries and Veins Were Destroyed by Tuberculous Myocarditis. S. Bellet, B. A. Gouley and T. M. McMillan, Philadelphia.—p. 112.
- *Treatment of Elderly Diabetic Patients with Cardiovascular Disease: Available Carbohydrate and Blood Sugar Level. S. Soskin, L. N. Katz, S. Strouse and S. H. Rubinfeld, Chicago.—p. 122.
- *Yellow Atrophy of Liver: Report of Case, with Particular Reference to Metabolism of Copper. A. H. Gordon and I. M. Rabinowitch, Montreal, Canada.—p. 143.
- Distention as Factor in Intestinal Obstruction. R. C. Herrin and W. J. Meek, Madison, Wis.—p. 152.

Blood Cholesterol in Thyroid Disease.—Hurxthal determined the blood cholesterol during fasting as a routine in 505 patients with thyroid disease, along with the pulse, the weight and the basal metabolic rate. He observed that the lowest average values for blood cholesterol were in patients in or near thyroid crises. Auricular fibrillation in toxic goiter was associated with the next lowest average level of cholesterol. The average cholesterol value in all types of exophthalmic goiter was lower than in toxic adenomatous goiter. Recurrent hyperthyroidism was associated with cholesterol values that were almost as low as those in exophthalmic goiter. The average cholesterol value in nontoxic goiter was normal, although the scatter was wider than the author expected. Age appeared to raise the blood cholesterol in these cases. Chronic thyroiditis was associated with higher average values than in any other thyroid disease except myxedema. The level of the blood cholesterol and the basal metabolic rate bore a reciprocal relationship when judged by average values.

Intravenous Pressure.—Brams and his associates' method of estimating the intravenous pressure is based on the principle that the superficial veins on the dorsum of the hand can be easily visualized in a darkened room by placing a small light, such as an ordinary pocket flashlight, against the palmar surface, preferably in the interosseous spaces. The superficial veins by this transillumination appear as black bands, which can be obliterated by moderate pressure and thus distinguished from shadows cast by ligaments. After the patient has been

placed at rest for ten minutes in a horizontal or semirecumbent position, the arm and hand to be examined are supported horizontally by a pillow and held at a level which corresponds to the point of entrance of the vena cava into the right auricle. The mouth of a small glass funnel is covered by a thin rubber dam held securely in place by a thread tied tightly in a previously prepared groove near the rim. A small hole is then cut in the center of the rubber dam, through which the vein to be examined is visualized. The surface of the rubber dam is then covered with rubber cement, and the funnel is placed on the dorsum of the hand so that the previously selected vein is seen through the aperture in the rubber. The funnel is held in place by moderate pressure until the rubber is adherent to the skin. The tip of the funnel is then connected by rubber tubing to a suitable water manometer, which is so graduated that pressure may be read in millimeters of water. The room is darkened, or a black cloth is placed over the head of the observer, and the light is placed against the palmar surface of the hand in order to visualize the dorsal vein within the aperture of the rubber dam. The air pressure is then slowly raised in the instrument by a suitable rubber bulb—with the leak-valve shut—until the vein under examination becomes obliterated as a result of the external compression. It is important to distinguish two stages; the first is the obliteration of the vein, and the second, further blanching of the skin. The authors selected the former as the end-point at which the pressure is read off in the manometer in millimeters of water. They examined a series of twelve patients and later compared the results with those obtained by the direct method. They observed that a high degree of accuracy is possible with their indirect method. They believe that with minor improvements the method can be adopted for general clinical use.

Detection of Murmur of Acute Pericarditis.—Segall states that the pericardial friction murmur is a clinical sign, the detection of which depends on methods of eliciting it and of differentiating it from other murmurs that may be heard over the precordium. From the point of view of the observer in search of clinical signs, the discovery of a typical leathery friction rub in the course of an ordinary examination of the heart may be looked on as a fortunate accident. Respiratory movements, postural changes and shaking or rolling of the body may cause a pericardial friction murmur to appear, to vanish and to reappear, and they may alter the loudness, quality and position of the murmur. These procedures, therefore, constitute methods of eliciting a friction murmur and of differentiating it from other murmurs which it may resemble.

Leukemia After Lymphosarcoma.—Kato and Brunschwig review the literature and report in detail two cases in which acute leukemia followed roentgen treatment for lymphosarcoma. When the patients were first seen they presented a normal blood picture; a short time later, acute lymphatic leukemia developed with a rapidly fatal termination. The authors believe that this is additional evidence in favor of the view that lymphosarcoma and lymphatic leukemia are only different stages in the same pathologic process. As they instituted roentgen therapy in both of their cases immediately after they made a diagnosis of lymphosarcoma, the question arises as to whether or not this treatment induced the leukemic state.

Treatment of Elderly Diabetic Patients with Cardiovascular Disease.—Soskin and his associates confirm the characteristic myocardial impairment resulting from insulin hypoglycemia reported by other workers. Their results indicate that the changes in the ST segment and T wave of the electrocardiogram following the administration of insulin depend on the direction of the major deflection of the QRS complex, a correlation heretofore overlooked. They obtained similar results by the therapeutic use of insulin, in amounts that did not cause hypoglycemia, in the treatment of elderly diabetic patients with cardiovascular disease. The results that they obtained with insulin they also obtained by the use of a low carbohydrate diet without insulin. The objective manifestations of myocardial impairment obtained with both insulin and a low carbohydrate diet were almost always accompanied by complaints of subjective distress in their patients. They conclude that the deleterious action of insulin on the heart is probably not due to a direct toxic action on the myocardium but is probably related to the supply of carbohydrate that is readily available to this organ.

Yellow Atrophy of Liver.—The literature on the metabolism of copper is briefly reviewed by Gordon and Rabinowitch, and, though the data are not conclusive, they do suggest that copper, a normal constituent of food, may be harmful when administered in excess quantities. They report a case of acute yellow atrophy of the liver in which the liver was found to contain an enormous amount of copper. In spite of the large amount of copper, there was no arsenic. Though it may be difficult to associate the anatomic changes in the liver with the exposure of the patient to copper as long as fifteen years ago, there is a reasonable chemical basis for this association. There is, first, the incontestable fact that the liver contained a large amount of copper—as far as they could ascertain, the largest amount on record. They suggest that the failure of the liver to excrete the copper may have been due to the fact that copper forms with protein a series of quite stable proteinates. The liver is also rich in products of protein digestion, many of which also form with copper quite stable compounds. This fact is frequently made use of in quantitative analysis. They conclude that the purpose of reporting their case is to prompt further investigation, in view of the present widespread and increasing use of copper therapeutically. Though copper may have its use, its too general use might do harm. It suggests an analogy in the experiences with the incorporation of iodine in table salt for the prevention of goiter.

Archives of Pathology, Chicago

15: 1-174 (Jan.) 1933

- Fate of Endometrial Emboli in Venous Circulation of Rabbit. V. C. Jacobsen, Albany, N. Y.—p. 1.
- Fenestrated Hammock-Like Structure in Left Cardiac Atrium: Review of Literature and Report of Case. F. C. Helwig, Kansas City, Mo.—p. 8.
- Bone Lesions in Rats Produced by Substitution of Beryllium for Calcium in Diet. S. A. Jacobson, New York.—p. 18.
- *Histologic Changes in Rabbits and in Dogs Following Intravenous Injection of Thorium Preparations. E. Shute and M. E. Davis, Chicago.—p. 27.
- *Necrotizing Arteritis and Subacute Glomerulonephritis in Gonococcal Endocarditis: Toxic Origin of Periarthritis Nodosa. M. Helpner and M. Trubek, New York.—p. 35.
- Persistent Truncus Arteriosus and Congenital Absence of One Kidney with Other Developmental Defects. D. C. Beaver, Rochester, Minn.—p. 51.
- *Manual Strangulation. T. A. Gonzales, New York.—p. 55.
- Comparison of Hypertrophic Changes in Thyroid Caused in Different Species by Acid Extract of Anterior Lobe of Bovine Pituitary Gland. E. W. Thurston, St. Louis.—p. 67.
- *Primary Epithelial Tumors of Vermiform Appendix: Observations by Silver Impregnation. G. Van S. Smith, Brookline, Mass.—p. 78.

Histologic Changes Following Injection of Thorium Preparations.—By means of intravenous injections of thorotrast and similar thorium preparations, Shute and Davis secured the visualization of the spleen and liver in rabbits and dogs, but they were unable to visualize the placenta. They used smaller relative doses than other authors did for successful placental visualization in the rat. These doses, however, produced intense degeneration, particularly of the liver and spleen, caused one of their rabbits to abort, and produced spontaneous rupture of the spleen as well as a fatal postpartum hemorrhage. Particles of thorotrast practically disappear from the liver and spleen in from two to three months after their injection, and the cells by that time regain almost a normal appearance. The placenta of the dog and of the rabbit appears to be an effective barrier to the transmission of thorium to the fetus. With the one exception, all their pregnant animals carried their young to term or were killed near term for purposes of study. The metal could be found in the rabbit placenta microscopically up to eleven days after injection, but by this time it was in the form of fine particles and after that seemed to disappear. They were unable to stain the thorium particles in the tissues. The placental cells did not show the destructive changes seen in the cells of the liver and spleen.

Necrotizing Arteritis and Glomerulonephritis in Endocarditis.—In a case of subacute glomerulonephritis of ten weeks' duration, death occurred from uremia with pericarditis. The onset of this illness occurred eight weeks after a gonococcal urethritis complicated by a gonococcal ophthalmia. At necropsy, Helsen and Trubek found a right-sided subacute gonococcal endocarditis of the pulmonic valve and a typical subacute glomerulonephritis. In addition, isolated necrotizing inflammatory lesions of the small arteries were found in two widely separated regions of the body: the choroid coat of the

eye and the testis. These vascular lesions exhibited many of the morphologic features described in periarteritis nodosa and were considered as belonging to that group. The larger arteries of the body were not involved, and the distribution of the lesions was not extensive enough to produce clinical manifestations. The renal lesion represented a severe reaction of a sensitive organ to the toxin produced by the gonococci growing on the pulmonic valve. The vascular lesions, which in their case were anatomically dissociated from the kidney, were also considered a specific reaction of sensitive vessels to this toxin. Their observations strengthen the conception that these vascular lesions and those of periarteritis nodosa do not represent a specific disease but rather a specific reaction of the blood vessels to any of a whole group of variable toxins.

Manual Strangulation.—Gonzales studied twenty-four cases of manual strangulation with a view to correlating the post-mortem lesions. They represent approximately 0.7 per cent of the total number of homicides, indicating the comparative rarity of this form of violent death. Nearly half of the cases presented injuries of the larynx or of the hyoid bone, and deep hemorrhages were observed in the entire series, contrasting with suicidal hangings, in which complete absence of these lesions was common. The diagnostic significance of the surface lesions, deep cervical hemorrhage and injuries to the thyroid alae, cricoid cartilage and tracheal rings is stressed. No instance of precipitate death from irritation of cervical nerves could be demonstrated, and the difficulty of diagnosis is indicated.

Primary Epithelial Tumors of Vermiform Appendix.—Smith states that the incidence of primary epithelial tumor of the appendix encountered at his clinic is 0.27 per cent. He briefly describes twenty-one carcinoids in relation to clinical and pathologic observations and argentaffin characteristics which link these tumors with the argentaffin cells of the appendix. He describes one primary columnar cell adenocarcinoma of the appendix. It did not reduce silver. Another appendix contained metastatic squamous carcinoma of the cervix which did not reduce silver. He believes that from a study of the argentaffin cells of 261 appendixes the following statements seem justified: Regardless of the age of the patients, the symptoms and the amount of inflammation, the number of argentaffin cells varies considerably. In general, the number of these cells decreases with age and inflammation, especially if symptoms are present.

Iowa State Medical Society Journal, Des Moines

23:1-58 (Jan.) 1933

- Great Importance of Medical Profession in Scheme of National Defense. G. A. Skinner, Omaha.—p. 1.
Comparative Study of Pericarditis. H. L. Smith and F. A. Willius, Rochester, Minn.—p. 6.
Roentgenology as Aid to Obstetric Diagnosis. E. L. Rypins, Iowa City.—p. 12.
Fecal Impaction. C. J. Drueck, Chicago.—p. 14.
Chest Pain Caused by Superficial Thrombophlebitis. E. E. Kottke, Des Moines.—p. 18.
Achlorhydria. Julia Cole, Iowa City.—p. 20.
Quinine Amblyopia or Retrobulbar Neuritis Consequent to Giving of Optochin Base. Grace M. Sawyer, Woodward.—p. 25.

Johns Hopkins Hospital Bulletin, Baltimore

52:1-117 (Jan.) 1933

- *Pathogenesis of Tuberculous Meningitis. A. R. Rich and H. A. McCordock, Baltimore.—p. 5.
Jake Paralysis: Paralysis Following Ingestion of Jamaica Ginger Extract Adulterated with Triorthocresyl Phosphate. J. G. Kidd and O. R. Langworthy, Baltimore.—p. 39.
*Five Cases of Addison's Disease with So-Called Atrophy of Adrenal Cortex. G. L. Duff and C. Bernstein, Baltimore.—p. 67.

Pathogenesis of Tuberculous Meningitis.—Rich and McCordock present experimental and morphologic evidence which demonstrates that diffuse tuberculous meningitis is not a direct and immediate result of hematogenous infection of the meninges. Miliary tuberculosis produces only rare, sparsely scattered tubercles in the meninges, not diffuse meningitis. Tuberculous meningitis has its origin in the discharge of bacilli into the cerebrospinal fluid from adjacent, older caseous tuberculous foci. Such discharging foci have been found, by careful search, in the substance of the brain or cord, in the meninges, in the bones encasing the central nervous system, or in the choroid plexus in seventy-seven of the eighty-two

cases of meningitis in their series. In all except two of these seventy-seven cases the demonstrated source of the diffuse meningitis was situated in the substance of the central nervous system or in the meninges. In the five cases in which no local focus was found, the material for study was incomplete.

Addison's Disease with Atrophy of Suprarenal Cortex.—Duff and Bernstein report five cases of Addison's disease, four of which they treated with suprarenal cortex extract. All of them showed more or less complete "atrophy" of the suprarenal cortex. The destructive process in the suprarenals consisted of a progressive necrosis of cortical cells with collapse of the stroma. In two cases there was regeneration of cortical tissue. The medulla was affected to a much less degree, usually showing only a slight increase in the density of the fibrous framework and some shrinkage of the medullary cells. Lymphocytic infiltrations were constantly present in the suprarenal medulla and among the remnants of cortical tissue. Lymphocytic infiltrations in various situations constituted the most constant observations in association with the suprarenal lesions. Marked hyperplasia of lymphoid tissue was not present in any of the cases. No lesions were found for which the treatment with suprarenal cortex extract could be held responsible. The authors discuss the relation of the pathologic observations to the clinical observations. A consideration of the possible factors in the etiology of the suprarenal lesions leads them to the conclusion that a circulating toxin of unknown origin and nature is probably the causative agent. Four of their cases showed early stages of destruction of the suprarenal cortex but presented no clinical evidence of Addison's disease. These observations indicated that the suprarenal lesion is primary in the cortex and that the three zones of the cortex differ in their susceptibility to damage.

Journal of Experimental Medicine, New York

57:1-180 (Jan. 1) 1933

- Studies on Mouse Leukemia: VII. Relation of Cell Death to Potency of Inoculated Cell Suspensions. M. N. Richter and E. C. MacDowell, New York.—p. 1.
Active Immunization of Mice with Polysaccharides of Pneumococci Types I, II and III. J. Zozaya and Janet Clark, Glenolden, Pa.—p. 21.
Immunologic Reactions Between Agar-Agar and Some Bacterial Antisera. J. Zozaya and L. Medina, Glenolden, Pa.—p. 41.
Observations on Cultivation of Vaccine Virus in Lifeless Media. T. M. Rivers and S. M. Ward, New York.—p. 51.
Role of Spleen in Iron Metabolism as Elucidated by Changes in Iron Balance After Splenectomy. Elizabeth D. Wilson and E. B. Krumbhaar, Philadelphia.—p. 65.
Studies on Bartonella Muris Anemia: VIII. Changes in Chemical Constituents of Blood During Anemia. Marta Sandberg, D. Perla and Jessie Marmorston-Gottesman, New York.—p. 81.
Immunity Reactions of Human Subjects to Strains of Pneumococci Other than Types I, II and III. M. Finland and W. D. Suttiff, Boston.—p. 95.
Allergic Lobar Pneumonia: Experimental Study. B. M. Fried, Boston.—p. 111.
Occurrence of Antigotoxic Substances in Plants. D. Marine, E. J. Baumann, B. Webster and Anna Cipra, New York.—p. 121.
Study of Therapeutic Mechanism of Antipneumococcal Serum on Experimental Dermal Pneumococcus Infection in Rabbits: II. Comparison of Therapeutic Effect of Unrefined, Antipneumococcal Serum with that of Its Various Protein Fractions: Role of Nonantibacterial Factor. A. B. Sabin, New York.—p. 139.
Morphology of Bacterium Shigae Cultivated on Various Media Favorable to Development of Filtrability and Life Cycle Forms. R. W. G. Wyckoff, New York.—p. 165.

Kentucky Medical Journal, Bowling Green

31:1-72 (Jan.) 1933

- How Can You as Family Physician Lessen the Frequency and Complications of Grip, Influenza or Flu? R. W. Bledsoe, Covington.—p. 20.
Difficult Fractures. W. B. Owen, Louisville.—p. 27.
Meningococcal Meningitis Treated with Through-and-Through Drainage: Case. J. W. Bruce, Louisville.—p. 31.
Hydrophobia: Case Report. D. S. Robertson, Symsonia.—p. 33.
Some Problems in Pediatrics. J. H. Pritchett, Louisville.—p. 35.
Community Health. H. Linden, Harlan.—p. 37.
Nonsurgical Treatment of Lymphoid Tissue of Throat. E. C. Yates, Lexington.—p. 39.
Prenatal Syphilis. W. U. Rutledge, Louisville.—p. 41.
Reminiscences of Medicine. H. A. Kelly, Baltimore.—p. 44.
Management of Cutaneous Burns in Children. E. C. Davidson, Detroit.—p. 46.
Ethylene Anesthesia. H. S. Eggers, Louisville.—p. 51.
Use of Bismuth in Treatment of Syphilis. C. C. Barrett, Lexington.—p. 57.
Treatment of Diarrhea in Infants. T. J. Marshall, Paducah.—p. 60.
Complications of Labor. B. S. Rutherford, Bowling Green.—p. 62.
Treatment of Intestinal Obstruction. G. A. Hendon, Louisville.—p. 65.

Maine Medical Journal, Portland

24: 1-20 (Jan.) 1933

- *Transurethral Prostatic Resection: Review of Recent Literature and Personal Observations. C. N. Peters, Portland.—p. 4.
Neurosyphilis: Results of Treatment at Bangor State Hospital. C. J. Hedin, Bangor.—p. 7.

Transurethral Prostatic Resection.—Peters reviews the literature and from its study states that transurethral prostatic resection is a distinct step forward in the urologic field. Its application to many types of bladder neck obstruction is a feasible and practical method of relief. In malignant prostates, it offers the best way of dealing with obstruction to the urinary flow with the least possible hardship to the patient. Its immediate surgical results are gratifying to the patient and reassuring to the physician. It is too recent a procedure to draw conclusions as to end-results or its value in replacing prostatectomy in all cases. It is a major surgical operation for the use of trained specialists accustomed to dealing with pathologic changes of the bladder neck.

Michigan State M. Society Journal, Grand Rapids

32: 1-74 (Jan.) 1933

- Work Plan for Section on Gynecology and Obstetrics. N. F. Miller, Ann Arbor.—p. 1.
Tumors and Their Behavior. H. J. Vanden Berg, Grand Rapids.—p. 4.
Bacteriophage. M. H. Soule, Ann Arbor.—p. 8.
*Treatment of Diabetic Coma. W. V. Vander Voort, Battle Creek.—p. 14.
Some Physical and Social Aspects of Malnutrition in School Children. J. G. Slevin, Detroit.—p. 21.
Gynecologic Symptoms of Maladjusted Woman. B. W. Malfroid, Flint.—p. 25.
Injuries of Knee Joint. C. W. Peabody, Detroit.—p. 28.
Sickle Cell Anemia in Six Months Old Colored Female Infant: Report of Case. Hira E. Branch, Detroit.—p. 35.
Michigan Department of Health. C. C. Slemmons, Lansing.—p. 36.

Treatment of Diabetic Coma.—Vander Voort believes that diabetic coma is an emergency which demands an immediate, heroic, uninterrupted, and personally supervised treatment. The alveolar carbon dioxide tension estimation is invaluable as a time saver and is a reliable index for the institution of immediate treatment. The basic foods excel in the prevention and treatment of coma. Factors that tend to increase the hydrogen ion concentration of the blood should be carefully searched for and eliminated, if possible. All foci of infection should be removed as quickly as the patient's condition will permit. He believes that in desperate moribund cases the mortality percentage can be greatly reduced by the careful administration of larger quantities of fluid and insulin, the dosage depending on the age of the patient and the condition of the cardiovascular system. The initial and subsequent dosage of insulin is unknown, as every patient is a law unto himself, but enough must be given to control the coma, regardless of the amount used. Coma, if taken in time, usually vanishes before insulin, salt, water and work. As soon as the oral administration of food is tolerated, the patient should be given easily absorbed, nonirritating and well strained liquids in small amounts at not too frequent intervals, fats and proteins being eliminated as nearly as possible, at least for the first twenty-four to forty-eight hours. No patient should be permitted to leave the hospital until he has been instructed in rudimentary diabetic dietetics, urinary analysis, and at least a few symptoms and preliminary treatment of coma and insulin reaction.

New Jersey Medical Society Journal, Orange

30: 1-122 (Jan.) 1933

- Simple Method of Pelvimetry by Roentgenography. J. H. Underwood and E. E. Downs, Woodbury.—p. 1.
*Cervical Infections. T. B. Lee, Camden.—p. 2.
Treatment of Eclampsia. S. A. Cosgrove, Jersey City.—p. 6.
Caesarean Section as Positive Factor in Maternal Mortality. J. C. Brown, Atlantic City.—p. 16.
Progress in Prevention and Control of Eclampsia. J. O. Arnold, Philadelphia.—p. 22.
Clinical Anatomy and Physiology of Colon. V. Knapp, Asbury Park.—p. 26.
Preventive Medicine from Standpoint of Internist: Its Value for Public Health. L. F. Barker, Baltimore.—p. 29.

Cervical Infections.—Lee states that young children often suffer with leukorrhea which recurs at times and varies in amount during a period of years. More often than is commonly suspected the cervix is infected. The difficulty encountered, and the patience required, too often result in neglect of these patients. Cervicitis is the chief cause of sterility, and the cause

most amenable to treatment. The cervix is potentially infected in every case of labor or abortion. Cervicitis is important as a source of focal infection, so far as the pelvic organs are concerned. Leukorrhea should be regarded as indicating cervicitis until proved otherwise. The close relationship between cervicitis and cancer of the cervix should be always kept in mind. Cervices in which chronic infections have been cured apparently do not develop cancer.

Psychiatric Quarterly, Albany, N. Y.

7: 1-190 (Jan.) 1933

- Pilgrim State Hospital. F. W. Parsons, Albany, N. Y.—p. 5.
Review of Work of Psychiatric Institute and Hospital During Past Year. C. O. Cheney, New York.—p. 16.
Family Care and Institution Problem. H. M. Pollock, New York.—p. 28.
Psychoses in Identical Twins: Contribution to Study of Etiology of Functional Psychoses. W. E. Merriman, Poughkeepsie, N. Y.—p. 37.
Present and Future Outlook in Treatment of Amentia. L. P. Clark, New York.—p. 50.
*Tumors of Pituitary Gland and Its Neighboring Structures. L. M. Davidoff, New York.—p. 72.
Nervous System and Antibody Production. N. Kopeloff, L. M. Kopeloff and M. E. Raney, New York.—p. 84.
Investigation of Methods of Measurement of Electrical Phenomena of Skin. C. Landis and T. W. Forbes, New York.—p. 107.
Experimental Toxic Approach to Mental Diseases—Reaction of Brain Tissue to Subcutaneous Injection of Enterogenous Toxic Substances—Indole and Histamine: Part II. A. Ferraro and J. E. Kilman, New York.—p. 115.

Tumors of Pituitary Gland and Its Neighboring Structures.—Davidoff points out that the pituitary gland is a complex organ presiding over the growth of the body, its metabolism and the regulation of function of most of the other endocrine glands. Its position is in close proximity to the vegetative centers of the hypothalamic region, the optic chiasm and the circle of Willis. Tumors of the pituitary and its neighboring structures, while presenting many symptoms in common, vary in their clinical manifestations according to their origin, character, size, position and direction of growth. By means of these variations, most of them can usually be diagnosed clinically. Such accurate diagnoses are important in guiding the plan of treatment. The treatment is generally of a surgical nature, sometimes in combination with roentgen therapy, although at times the latter alone may be used to advantage.

Public Health Reports, Washington, D. C.

47: 2325-2364 (Dec. 23) 1932

- Public Health Organization and Administration in Naples, Italy. J. G. Townsend and E. Buonocore.—p. 2328.
47: 2365-2394 (Dec. 30) 1932
Rocky Mountain Spotted Fever (Eastern Type): Virus Recovered from Dog Tick Dermacentor Variabilis Found in Nature. L. F. Badger.—p. 2365.
Endemic Typhus Fever Virus Recovered from Wild Rat Trapped at Typhus Focus in United States. R. E. Dyer, W. G. Workman and A. Runnreich.—p. 2370.

48: 1-26 (Jan. 6) 1933

- *Modification of Vaccine Response in Rabbits by Application of Diphtheria Toxin to Vaccination Site. C. Armstrong.—p. 1.
Study of Some Vitamin B Adsorbates. V. Breckner.—p. 7.

48: 27-62 (Jan. 13) 1933

- Trends of Health in United States. R. H. Britten.—p. 27.
Influence of Oxygen Tension on Rate of Autolysis of Certain Malignant Tumors and Normal Tissues. Mary E. Maver, J. M. Johnson and C. Voegtlin.—p. 42.

Modification of Vaccine Response.—Armstrong in his experimental studies found that diphtheria toxin when added in suitable amounts to vaccine virus exerts a deterrent local action on the take in rabbits and renders the systemic response less severe. The deterrent action of diphtheria toxin on vaccinia is neutralizable by diphtheria antitoxin. The deterrent action is apparently occasioned by the local cellular reaction rather than by any direct action of the diphtheria toxin on the virus. The site of a positive Schick response in rabbits remains relatively insusceptible to vaccine virus for at least twenty days.

Tennessee State Medical Assn. Journal, Nashville

26: 1-46 (Jan.) 1933

- Epiphyseal Separations. A. H. Meyer, Memphis.—p. 1.
Lead Poisoning in Children in Nashville. J. S. Crutcher, Jr., Nashville.—p. 20.
Review of the Organization and Early History of Upper Cumberland Medical Society. W. B. Young, Bon Air.—p. 24.
Failing Heart of Middle Life. W. J. Matthews, Johnson City.—p. 29.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1:1-46 (Jan. 7) 1933

- *Etiologic Factors in Osteo-Arthritis of Hip Joint. R. C. Elmslie.—p. 1.
- *Surgical Treatment of Osteo-Arthritis of Hip. E. W. H. Groves.—p. 3.
- Sinusitis and Its Radiologic Demonstration. H. K. G. Hodgson.—p. 5.
- Adenoma of Islets of Langerhans Associated with Hypoglycemia. R. McD. Cairns and S. E. Tanner.—p. 8.
- Pancreatic Cysts. D. Smith.—p. 11.
- *Total Avulsion of Scalp: New Method of Restoration. G. F. Mitchell.—p. 13.

Etiologic Factors in Osteo-Arthritis of Hip.—Elmslie classes the etiologic factors concerned in the production of osteo-arthritis of the hip as traumatic, mechanical, toxic, chemical and local disease of the articular ends of the bone. When once the degenerative changes have started, alterations occur in the shape of the bones entering into the articulation, so that whatever the original cause an additional mechanical factor is then induced. These alterations eventually give rise to roentgen appearances that make it difficult to assess how much of the deformity is due to the arthritis and how much was preexistent. There is, however, sufficient evidence of the importance of the mechanical factors in producing osteo-arthritis of the hip to make one always think of the possible late results when one is treating deformity of this joint earlier in life, so that one should always bear in mind that the mechanics of the joint should be kept as nearly natural as possible. Osteo-arthritis of the hip is far more common in men than in women and occurs particularly in manual workers and in athletes. Strain and minor injury must be important factors, but in the majority of patients it is impossible to ascribe the condition to any particular accident. It is not unusual, however, to find that dislocation of the hip or an intracapsular fracture leads after an interval to the development of the characteristic degenerative changes. The various major joints subject to osteo-arthritic changes, the author concludes, are that the upper limb, the shoulder and the wrist are seldom affected, but the elbow frequently undergoes changes in which the joint surfaces are eroded and osteophytes develop, and in the lower limb the hip and knee are most often affected, the ankle seldom.

Surgical Treatment of Osteo-Arthritis of Hip.—Groves states that because osteo-arthritis of the hip is essentially a process of wear and tear, resulting from two main factors—age and trauma—to which some toxic factor may be added in a minor degree, treatment usually is only palliative and not radical or curative. But on the other hand the relief of pain is a great achievement, and he states with considerable conviction that patients with hip osteo-arthritis treated by a well chosen operation are nearly always extremely grateful and satisfied with the measure of relief afforded them. Operative treatment is especially indicated in monarticular arthritis of comparatively young patients and in cases in which trauma has been a causative factor and pain a prominent result. Under these conditions he feels confident that operation can afford relief in all cases, but it requires judgment and a chastened experience to choose the right type of operation for each case. Apart from small variations in the pathologic changes, there are two widely different types of osteo-arthritic hips. In one, the socket is shallow and inadequate, and there seems to be almost a subluxation, so little does the femoral head fit into the acetabulum. Such cases are often old Perthes disease or the result of congenital dislocation that has been reduced. In the other, the socket is deep and the head large. There is so much osteophytic growth round the articular margin of the head that the neck of the femur is nearly as thick as the head. The author concludes that cheilectomy is indicated in marked osteophytic outgrowths resulting from trauma and confined to one hip; modified arthroplasty in the hip in which the socket is deep, the head and neck enlarged so that the joint has become "seized," either lessening the head or removing part of the socket; arthrodesis in the painful hip; excision on the worst side in double arthritis with stiffness of both hips and much pain; and osteotomy in cases with varus deformity or subluxation osteotomy.

Total Avulsion of Scalp.—Mitchell reports a case of total avulsion of the scalp in which he adopted the following

method of restoration: The denuded area and the remaining shaved scalp were dressed in saline packs. Under full anesthesia a series of incisions extending down to the pericranium were made, three on the lateral and two on the anterior and posterior aspects, the resulting flaps being three-fourths inch wide and care being taken to leave sufficient attachment at each end of the flaps to allow an adequate blood supply. No attention was paid to hemorrhage, and each succeeding whole-thickness flap was undercut and levered toward the center. The upper lateral flaps were first sutured together with strong catgut; the next lateral flaps were then sutured to the first, leaving a gap of half an inch, and then the third lateral flaps were sutured to the second, leaving another gap of half an inch. The anterior and posterior flaps were treated in the same manner. During this time the hemorrhage was easily controlled by pressure. The whole operation area was then flushed with a 0.5 per cent solution of chlorine. A large sheet of oiled silk soaked in petrolatum was spread over it, subsequent pressure being obtained by means of a capeline bandage. At the end of a week in the author's case the flaps were firmly adherent to the pericranium. Three weeks after the operation the center gaps were rather wider than anticipated, but the granulations were healthy. Under full anesthesia the author made two tongue flaps from the back of the scalp and turned them up into the adjacent gaps, after having removed the thick granulations. None of the hair-bearing scalp flaps were destroyed, and four months later the hair was growing well, the granulation areas being smooth and flush with the adjacent scalp. The bandages were removed at this time, as the patient was receiving mild doses of ultraviolet radiation every second day. The author concludes that the actual operation takes little time and the narrow channels between the flaps require no attention, the granulations filling the gaps completely. The postoperative appearance is a source of satisfaction, because there is hair on the top of the head.

East African Medical Journal, Nairobi

9:275-307 (Jan.) 1933

- The White Man in East Africa. D. V. Latham.—p. 276.
- Yellow Fever Problem as It Affects Tanganyika Territory, Together with Notes on Recent Literature on Yellow Fever. R. R. Scott.—p. 283.
- Clinical Study of Pneumonia Among Africans. H. C. Trowell.—p. 294.
- Transposition of Viscera: Case. J. A. Carman.—p. 305.

Journal of Physiology, London

77:111-206 (Jan. 16) 1933

- Heat Production of Crustacean Nerve. Mary Beresina and T. P. Feng.—p. 111.
- Localization of Action of Drugs on Pulmonary Vessels of Dogs and Cats. J. H. Gaddum and P. Holtz.—p. 139.
- Studies on Physiology of Reproduction: V. Suprarenal Cortex in Pregnancy and Lactation. Dorothy H. Andersen and Helen S. Kennedy.—p. 159.
- Differential Pharmacology of Inferior Vena Cava of Some Mammals. K. J. Franklin.—p. 174.
- Measurement of Red Cell Volume: IV. Alterations in Cell Volume in Hypotonic Plasma. J. Macleod and E. Ponder.—p. 181.
- Investigation of Toxic Effects of Large Amounts of Sugar in Blood. C. Evans.—p. 189.
- Rate of Blood Flow and Gaseous Metabolism of Uterus During Pregnancy. J. Barcroft, W. Herkel and S. Hill.—p. 194.

Medical Journal of Australia, Sydney

1:1-42 (Jan. 7) 1933

- Signs and Symptoms of Acute Stage of Anterior Poliomyelitis in 1931-1932 Epidemic. S. F. McDonald.—p. 1.
- *Few Notes on Serum Treatment of Acute Anterior Poliomyelitis. A. E. Paterson.—p. 5.
- *Discussion on Treatment of Anterior Poliomyelitis from Onset of Paralysis Till End of Spontaneous Recovery of Power in Muscles. L. W. N. Gibson.—p. 8.
- Late Treatment of Anterior Poliomyelitis. A. V. Meehan.—p. 10.
- Pathology of Acute Poliomyelitis. J. V. Duhig.—p. 14.
- Epidemiology of Anterior Poliomyelitis, with Especial Reference to Queensland Epidemic, 1931-1932. J. G. Drew.—p. 26.

1:43-74 (Jan. 14) 1933

- Report of Epidemic of Poliomyelitis in New South Wales, 1931-1932. A. H. Tebbutt and K. Helms.—p. 43.
- Recent Epidemic of Poliomyelitis from Physician's Point of View. E. H. M. Stephen.—p. 60.

Serum Treatment of Acute Anterior Poliomyelitis.—In an epidemic of acute anterior poliomyelitis, Paterson employed serum treatment in seventy-four patients, giving an average dose of 38.7 cc. During administration of the serum the patient was under an anesthetic and the dose, estimated

according to the time since onset, the child's general condition, and the cell count of the cerebrospinal fluid, was given: (1) at body temperature slowly through the lumbar puncture needle, already in situ, after 5 cc. more cerebrospinal fluid had been withdrawn; (2) intravenously by exposing a vein in the forearm. A further dose depended entirely on the child's progress and condition after twenty-four hours. The adoption of the intravenous route was the rule. The author concludes that, no matter to what extent paralysis is present, he is of the opinion that serum is beneficial as long as the patient is still febrile. The lives of some of his patients were saved by giving it, and in others it appeared to check further spread. In the future he aims to give larger doses, never to withhold serum even in the mildest of cases, to use combined intrathecal and intravenous administration and to produce a severe reaction.

Treatment of Anterior Poliomyelitis.—Gibson states that in the treatment of the late acute stages of poliomyelitis the essential factor is complete physiologic rest, mental as well as physical. Complete muscular rest is brought about by the fixation of the patients in plaster and splints. The patients are examined every day and their muscle groups are carefully and gently tested, and at the first sign of any muscular weakness fixation splints are applied immediately. The trunk and lower limbs are immobilized by the application of a complete plaster cast from the chest to the toes, the upper extremities by means of abduction splints of the birth palsy type. In the author's series of sixty-eight patients, the children were usually uncomfortable before the plaster cast was applied. In the convalescent stage, treatment consists of the immobilization of the patient's limbs and trunk in such a way that the weakened or paralyzed muscles are placed in a position of relaxation, and the institution of muscle training under the supervision of a skilled masseuse. The essential thing is not massage but muscle reeducation. Overdevelopment of the stronger muscles at the expense of the weaker ones should be avoided. When contractures occur, the weakened muscles are being continuously stretched and little recovery may be expected till the deformity is overcome. Early recognition of the disease and administration of the serum at a time when it is most efficacious will result in a favorable prognosis.

Practitioner, London

130: 113-232 (Feb.) 1933

- Early Diagnosis of Malignant Disease. H. Waring.—p. 113.
Early Diagnosis of Malignant Disease of the Skin. J. M. H. MacLeod.—p. 120.
Early Diagnosis of Malignant Disease of Tongue. D. C. L. Fitzwilliams.—p. 134.
Early Diagnosis of Carcinoma of Stomach. T. I. Bennett.—p. 141.
Early Diagnosis of Malignant Disease of Throat. L. Colledge.—p. 151.
Early Diagnosis of Malignant Disease of Mediastinum, Lung and Pleura. L. S. T. Burrell.—p. 157.
Early Diagnosis of Malignant Disease of Colon. W. H. Ogilvie.—p. 163.
Early Diagnosis of Malignant Disease of Rectum. C. Gordon-Watson.—p. 172.
Early Diagnosis of Cancer of Breast. G. Keynes.—p. 181.
Early Diagnosis of Malignant Disease of Uterus. W. F. Shaw.—p. 189.
Early Diagnosis of Malignant Disease of Bone. E. P. Brockman.—p. 199.
Early Diagnosis of Malignant Disease of Bladder. A. E. Roche.—p. 206.
Early Diagnosis of Malignant Disease of Prostate. H. P. Winsbury-White.—p. 217.
Early Diagnosis of Malignant Disease of Testis. C. H. Carlton.—p. 225.

Tubercle, London

14: 145-192 (Jan.) 1933

- Pulmonary Tuberculosis and Syphilis. O. Országh.—p. 145.
Tuberculous Bacillema. J. Cribbin.—p. 163.

Japanese Journal of Experimental Medicine, Tokyo

10: 521-605 (Dec. 20) 1932

- Experimental Research on Secretion of Stomach, Especially of Fundus Glands: IV. Mechanism of Secretion of Emulsion and Extract of Gastric Mucosa: Substance Stimulating Secretion of Gastric Mucosa. I. Sugishima.—p. 521.
Id.: V. Influence of Active Substance on Blood Pressure and Smooth Musculature. I. Sugishima.—p. 547.
Studies on Reaction of Complement Fixation with Vaccine Virus and Its Antiserum. G. Nakajima.—p. 559.
Experimental Studies on Time of Appearance of Postvaccinal Encephalitis. S. Ikei.—p. 563.
Studies on Virus of Smallpox. T. Taniguchi, M. Hosokawa, S. Kuga, Y. Komura and F. Nakamura.—p. 581.
Virus of Chickenpox. T. Taniguchi, M. Hosokawa, S. Kuga, F. Nakamura and S. Matsumoto.—p. 599.

Schweizerische medizinische Wochenschrift, Basel

63: 153-180 (Feb. 18) 1933

- Distribution of Mortality from Cancer in Canton of Berne According to Districts and Its Different Localizations. G. Dardel.—p. 153.
*Treatment of Cancer of Lip. R. Stewart-Harrison.—p. 159.
*Tissue Stimulating Substance and Action of Massage. W. Ruhmann.—p. 163.
Problems in Carcinoma Therapy. A. Voegeli.—p. 165.

Treatment of Cancer of Lip.—On the basis of forty-two cases of cancer of the lip, Stewart-Harrison discusses the indications for and the results of the various therapeutic measures. He considers irradiation the method of choice for the treatment of the primary tumor usually consisting of pavement cells. In discussing the treatment of the regionary lymph nodes he recommends an expectant attitude as long as cancerous involvement is not suspected, but if they show signs of cancer he advises their removal by the Crile method, whenever this is possible, and he recommends postoperative roentgen irradiation, depending on the negative or positive histologic indications.

Tissue Stimulating Substance and Action of Massage.—According to Ruhmann, tissue stimulating substances (so-called tissue hormones) are constituent substances of the body that are liberated within the tissues by stimulation and increase the functional condition of these tissues or of their nervous and vascular apparatus, respectively. In comparing the effects of the iontophoretic introduction of the best known tissue stimulating substances (histamine, acetylcholine and the circulatory hormone of the pancreas) with those of massage, it was found that the iontophoresis with acetylcholine produced effects that resembled massage action most closely. From this the author concludes that the tissue stimulating substance liberated by massage is acetylcholine or is very closely related to it. Moreover, he believes that the hyperemia produced by massage in the deeper tissues is also the result of the liberation of choline-like substances. Whereas acetylcholine as such produces muscular contraction, it decreases the tension in the changed condition of the muscle during increased muscular tonus. The author thinks that the release of involuntarily increased muscular tension by massage is probably to be explained by humoral action. If the sympathetic nervous system conducts the pain, the decrease in pain conduction by massage may be the result of the liberation of a parasympathetically active tissue stimulant such as acetylcholine. It is probable that, in addition to choline-like substances, other metabolic substances, such as adenosin, may play a part in the local action of massage, but it will require further studies to determine this.

Beiträge zur Klinik der Tuberkulose, Berlin

82: 1-132 (Jan. 16) 1933

- Influence of Altitude on Tuberculous Guinea-Pigs That Have Been Sensitized Toward Light by Means of Eosin. L. Lange, Bamatter, Grüniger and Löwenstätt.—p. 1.
*Virulence Tests with Tubercle Bacilli. E. Butschowitz.—p. 66.
Relation Between Virulence of Tubercle Bacilli and Prognosis of Pulmonary Tuberculosis. O. Amrein.—p. 74.
*Pathogenesis of Acute Generalized Miliary Tuberculosis. I. Minguez.—p. 84.
Experimental Studies on Bone Tuberculosis. M. Mandelstamm.—p. 98.
Calcium and Therapy of Tuberculosis. T. Sternberg.—p. 122.
Instrument for Coagulation and Division of Pulmonary Adhesions in Pneumothorax by Means of High Frequency Current. G. Leendertz.—p. 128.

Virulence Tests with Tubercle Bacilli.—Butschowitz shows that former tests on the influence of the virulence of tubercle bacilli on the course of the disease were unsatisfactory, because they disregarded the agglomeration of the bacilli in the culture, and that, even if attempts are made to break up the colonies, agglomerations containing twenty bacilli and more still remain. He therefore concludes that pure cultures are not suitable for virulence tests, and he decided to use a material in which each bacillus was separate; namely, the tuberculous sputum. He counteracted the toughness and the semisolid condition of the sputum as well as the presence of other bacteria by treating the sputum with a dilute solution of sodium hydroxide, and thus he obtained a pure culture suspended in a neutral, weak hypertonic solution, in which all bacilli were separate. Another advantage of this method is that the bacilli have not undergone changes in virulence by different culture mediums. After the number of bacilli per cubic centimeter had been determined and the suspension had been diluted to the desired degree, 0.5 cc. was injected sub-

cutaneously into the inguinal region of guinea-pigs, and 0.01 cc. was transferred to Lubenau's egg culture mediums. The colonies were counted after five weeks and the inoculated guinea-pigs were carefully observed and killed after ten weeks. The author reaches the conclusion that there is no definite parallelism between the clinical picture and the virulence of the tubercle bacilli. In the seven cases observed by the author some relationship between virulence and course of the disease could be observed, but this influence was neither dominating nor regular. Other factors appear to play a more important part.

Pathogenesis of Acute Generalized Miliary Tuberculosis.—Minguez discusses the theories advanced by other investigators and describes his own observations on thirty-nine cases. He expresses the opinion that a tuberculous focus, in order to become the point of origin of an acute dissemination, has to contain numerous bacilli, its content must have become softened or even liquefied, and an erosion of the vascular wall must have taken place so that an open connection exists between the blood channels and the tuberculous focus with its liquefied and virulent content. Thus the blood stream can flush out the content of the tuberculous focus and disseminate it. A tabular report shows that in thirty-one of the thirty-nine cases the author was able to detect the focus of origin. He also found that the dissemination originates most frequently in the lymph nodes. In regard to the theories advanced by others, he states that the vascular tubercles described by Weigert are generally the result and not the cause of miliary tuberculosis, but he does not deny the possibility that occasionally a caseated tubercle of the vascular wall may become the focus of a miliary tuberculosis. He rejects the Liebermeister-Huebschmann theory as far as it refers to the pathogenesis of miliary tuberculosis, but he agrees with Loeschke that Buhl's foci are the points of origin for dissemination into the blood stream.

Deutsche Zeitschrift für Chirurgie, Berlin

228: 653-746 (Feb. 16) 1933

- *Conservative and Operative Treatment of Pyloric Stenosis in Infants. O. Wiedhopf and H. Brühl.—p. 653.
*Experimental Studies of Treatment of Pancreatic Necrosis with Antitryptic Substances. J. Baumann.—p. 671.
Question of Influencing Bone Growth and Bone Regeneration. H. Boeminghaus.—p. 684.
Experiences with Klapp's Osteotomy. Bengen.—p. 705.
Clinical Value of Antistaphylokin Reaction and of Staphylokinase Action. F. Mondry.—p. 713.
Experimental Studies in Prevention and Treatment of Fat Embolism. W. Rückert.—p. 730.
Clinical and Experimental Studies of Course of Freezing Process. C. Hempel.—p. 736.
Operation for Carcinoma of Lip. O. Wiedhopf.—p. 741.

Pyloric Stenosis in Infants.—Wiedhopf and Brühl report fifty-eight cases of pyloric stenosis in infants treated in the pediatric and surgical clinics of the University of Marburg from 1925 to 1932, in which 84 per cent of the patients were boys. No hereditary tendency was noted. Hypertrophy of the pyloric musculature was present in all the cases. Of the thirty-five patients treated conservatively, two died. The treatment consisted of frequent feedings of the smallest amounts of human milk, rectal infusions, subcutaneous administration of dextrose and Ringer's solution, and blood transfusions. Among the definite indications for conservative treatment the authors include a late onset, say at the end of the first three months of life, moderate vomiting and insignificant or no loss of weight. Intractable vomiting, rapid emaciation and the presence of complicating conditions constituted absolute indications for operative intervention. The authors emphasize that with the conservative method the convalescence is slow, requiring from two to four months of careful treatment before the normal state is reached. Roentgenologic studies revealed that atonic dilatation, absence of vigorous peristalsis, ptosis and delayed emptying of the stomach were present from two to five years later. The possibility of ptosis of adults having its origin in infancy is suggested. Of the fifteen operative cases, one was of a severe degree, eight were designated as intensely severe and five extreme. There were two fatalities. The recovery was remarkably smooth and the stomach assumed normal peristaltic vigor on the fourth postoperative day. The convalescence was much shorter than with the conservative method. Ramstedt's method of splitting the serosa and muscularis down to the mucosa was adopted.

Treatment of Pancreatic Necrosis with Antitryptic Substances.—Baumann demonstrated that the organism of a dog with experimental pancreatic necrosis is flooded with active trypsin, which is excreted in the urine of the animal in large amounts. The most advanced lesions were found in the kidneys and in the liver, corresponding to the localization of highest concentration of trypsin. The author in this work sought a substance capable of lowering the proteolytic action of trypsin. He found that acriflavine hydrochloride in a dilution of 1:15,000 reduced the capacity of trypsin to digest casein to one half and, in a dilution of 1:30,000, to one fourth. The author believes that irrigation of the peritoneal cavity with this substance in a case of acute hemorrhagic pancreatitis would have the effect of neutralizing the proteolytic activity of trypsin.

Medizinische Klinik, Berlin

29: 245-278 (Feb. 17) 1933

- Fundus Oculi in Hypertension. R. Scheerer.—p. 245.
*Danger of Gangrene in Intermittent Claudication. H. Schlesinger.—p. 248.
Surgical Treatment of Severe Colitis. F. Mandl.—p. 251.
Resistance of Kidney Against Suppurative Infections. G. Wolfsohn.—p. 253.
*Parapulmonary Oxygen Administration as Therapy of Thyrotoxicosis. E. Flaum and O. Zimmermann.—p. 256.
Peculiar Pathogenesis of Case of Diabetes Mellitus. E. Kestermann.—p. 258.
Determination of Sugar Content of Urine. G. F. Materna.—p. 259.

Danger of Gangrene in Intermittent Claudication.—On the basis of 470 observations on 432 men and 38 women, Schlesinger concludes that intermittent claudication is rarely a symptom of anatomic changes in the arteries. He maintains that it is just as frequently a symptom of arteriosclerosis as of thrombo-angiitis obliterans, and he observed it most frequently in patients over 51 years of age. The danger of gangrene of the extremities is especially great in the first two years after the onset of the intermittent claudication. The patients with thrombo-angiitis are endangered to the end of the fifth year. In older patients the incidence of gangrene decreases after the third year, and in younger patients with the beginning of the sixth year. More than 8 per cent of all patients with intermittent claudication remain free from gangrene in spite of the fact that the intermittent claudication persists for many years. Patients who have intermittent claudication longer than six years (up to twenty years) rarely develop gangrene of a member; at least 83 per cent of this group remain free from gangrene. The most important etiologic factor is the abuse of nicotine, impairment by cold being much less important. The arterial disease causes periodic exacerbations and the intervening periods of improvement may last many years. This explains the relative benignity of many arterial disorders. Circumscribed gangrene does not indicate malignancy, for even repeated circumscribed gangrene may heal with shedding of the necrotic portions, and severe recurrence may be absent for years. Of forty patients, twelve were free from relapse and were able to work longer than six years after the first attack of gangrene. For this reason the author advises that crippling operations be postponed in the treatment of gangrene of the extremities and that conservative measures be tried.

Parapulmonary Oxygen Administration in Thyrotoxicosis.—Flaum and Zimmermann point out that Weinmann, when he employed oxygen in dental therapy, observed that the basal metabolism of his patients decreased as a result of the oxygen treatment. This observation and further studies by Weinmann and a collaborator induced the authors to try oxygen therapy in patients with thyrotoxicosis. The oxygen is applied to the gingiva under pressure of three atmospheres or more. As a result of the insufflation an emphysema develops, rapidly spreads and soon involves the mucous membrane of the lips and the surrounding subcutaneous tissues, so that a swelling of the lower eyelid and even of the forehead, chin and neck becomes noticeable. The emphysema generally persists for several hours. The authors repeated the treatment every day, each application lasting from two to fifteen minutes. In some patients only a few treatments were given, while in others they were continued for several weeks. Of the twenty patients with hyperthyroidism who were subjected to this treatment, seventeen were favorably influenced by the parapulmonary oxygen therapy. Not only did the increased metabolic rate decrease but the annoying heart palpitations disappeared. In a number

of cases the struma decreased, and in some cases even the exophthalmos receded somewhat. However, since in most instances the improvement was not lasting, the authors do not recommend this therapy as an independent intervention, but they think that whenever, for instance in intercurrent diseases, a temporary reduction in the metabolic rate is desirable, it can be employed with good success. They also suggest that it may replace the treatment with compound solution of iodine employed by many surgeons preparatory to strumectomy. It is superior to medication with compound solution of iodine in that it can be discontinued at any time without dangerous results, whereas in the course of the iodine treatment a temporary improvement is often followed by a considerable exacerbation necessitating an immediate surgical intervention. Moreover, there is a possibility that the favorable effects of the oxygen therapy may be lasting. The authors suggest that parapulmonary oxygen therapy may eventually prove helpful in combination with other conservative measures.

Münchener medizinische Wochenschrift, Munich

SO: 245-286 (Feb. 17) 1933

- *Tuberculosis of Small Children: Recognition and Treatment. H. von Mettenheim.—p. 245.
- Dyskinesia of Biliary Passages (Cholepathia Spastica) and Surgery. V. Schmieden and H. Niessen.—p. 247.
- *Nature and Treatment of So-Called Tennis Elbow. Hohmann.—p. 250.
- Pathogenesis of Acute Pseudo-Uremia. E. Becher.—p. 252.
- Treatment of Chronic Bacteriuria. O. Lürmann.—p. 255.
- Determination of Vitamin C in Milk. B. Bleyer.—p. 257.
- *Pollen Allergy. M. J. Gutmann.—p. 258.
- *Pregnancy Toxicoses, Particularly Eclampsia and Its Preliminary Stages. L. Seitz.—p. 262.

Tuberculosis in Small Children.—Von Mettenheim states that the examination of nurslings and small children who are tuberculin positive has greatly improved in recent years by testing their gastric fluid on animals. This method has revealed that a much higher percentage of tuberculous children eliminate tubercle bacilli than was formerly believed. It showed that some of the so-called closed cases were "latent open." The author investigated the value of this method in sixty-eight children suspected of tuberculosis or found to be tuberculin positive. His observations corroborated the results of other investigators. The author discusses the significance of early recognition of tuberculosis and particularly the measures to be taken to prevent spreading of the infection. He emphasizes that the general practitioner should at least perform the percutaneous test in children suspected of having tuberculosis. Small children in institutions should be subjected to the skin test without exception. Children with a positive tuberculin reaction should be examined with roentgen rays, and these roentgenologic examinations should be repeated from time to time. Small children with pulmonary symptoms should be isolated and kept in institutions for better observation. In doubtful cases, animal experiments should be made with the gastric juice.

Tennis Elbow.—Hohmann considers the so-called tennis elbow an irritation of the periosteum developing as a result of overexertion of the extensors of the hand inserted on the lateral epicondyle of the humerus. Ordinary work taxes these muscles considerably, but exceptional exertion, such as is required in playing golf or tennis or in chopping wood, may cause changes not only in the overtaxed muscles but also at the site of attachment of these muscles in the richly innervated periosteum of the lateral epicondyle of the humerus. Traction on the periosteum irritates it and causes a typical periostitis, which may lead to the formation of deposits. In chronic cases the deposits may appear in the roentgenogram as fine seamlike thickenings or as cloudy or jagged formations. The diagnosis of epicondylitis is facilitated by Thomsen's manipulation, in which the closed fist of the patient is pressed against a resistance in the volar direction, while the elbow rests on a support. The pulling on the actively contracted dorsal flexors produces the typical pain at their site of origin, the epicondyle. The author points out that the brachioradialis muscle cannot have the significance in tennis elbow that many ascribe to it, and he differentiates typical epicondylitis from arthrosis of the radiohumeral joint. He recommends immobilization of the hand and elbow for the treatment of epicondylitis as long as the condition is still new, and he advises surgical intervention for chronic cases. Following anesthetization of the region of the epicondyle, he makes an incision 3 cm. long, across the

anterior aspect of the epicondyle, and cuts into the fibers of the muscle tendon, releasing the tension by lengthening particularly the extensor carpi radialis brevis. This relieves the periosteal region on the epicondyle from the constant traction and gives it an opportunity to heal. The author considers unfounded the objection that this intervention might result in loss of power of the hand, provided only those fibers are divided which originate on the anterior protuberance of the epicondyle and in the adjoining slight depression. The epicondyle itself is usually free from changes, but, if the roentgenogram shows a spurlike exostosis, it should be removed. The flexed elbow is immobilized from eight to ten days by a plaster-of-paris cast. The favorable results of this operation obtained by the author in fifteen cases were corroborated by another author who employed it in four cases.

Pollen Allergy.—Gutmann discusses a few of the more important problems of hay fever and states that much is as yet unknown about its origin. The fact that pollen introduced into the nose of normal persons is eliminated unchanged, whereas in a hay fever patient sensitive to this particular type of pollen it is changed, some of it having burst, seems to indicate that either the mucous membrane or the mucus of the hay fever patient differs from that of a normal person. It may be that the allergic patient has an additional enzyme that breaks up the pollen, so that a toxin is liberated. After citing another test that indicates an increased dissolving power of the nasal secretion of the allergic patient, the author describes various attempts made to prevent the dissolving process or to counteract the influence of the dissolved substances, and he evaluates the various contributing causes. In discussing the clinical manifestations of pollen allergy, he emphasizes that it is a systemic disease with especial involvement of the eyes, nose, pharynx and bronchi, but that all other organs may become affected. Because he is convinced that it is a systemic disease, he advises the discontinuance of the term hay fever and the designation of the condition as pollinosis or pollen allergy. He points out that the general symptoms of pollinosis are not limited to fatigue and irritability but that there may be cutaneous manifestations in the form of herpes, urticaria or psoriasis, and that intestinal disorders, neuritic symptoms and urogenital and various other disturbances may develop in connection with pollen allergy. In discussing the diagnosis he evaluates the cutaneous reactions and expresses the opinion that tests with mixed extracts are not sufficient. He states that prophylactic treatment by desensitization is the most satisfactory therapy. In discussing the treatment during the hay fever season he tells of a patient who remained for hours in a meadow in spite of severe attacks of sneezing. Then blood was withdrawn from the cubital vein and 5 cc. of it was immediately injected intramuscularly. Three days later, 5 cc. of the serum was injected. This second injection was followed by severe local swelling but the patient remained free from hay fever symptoms for the remainder of the season. The author concludes with a discussion of the symptomatic treatment.

Toxioeses of Pregnancy.—Seitz points out that pregnancy effects considerable changes in the female organism and that in some women these changes lead to the manifestation of certain deficiencies. He mentions neurologic, dermatologic, hematologic and cholehepatic disturbances developing during pregnancy, but he gives especial consideration to eclampsia as characteristic of the later stages of pregnancy. He describes the clinical aspects of three different forms of eclampsia: the edematic-nephrogenic, the hepatogenic and the cerebral types. In discussing the therapy of eclampsia he points out that the recognition of its preliminary stages is of the greatest importance. During the last three months of pregnancy, edema should be watched for, the urine should be examined for the presence of albumin and casts, and the blood pressure should be taken regularly. The women should be asked about pressure pains in the right hypogastric region, visual disturbances, headaches, lack of appetite and nausea. Since in some pregnant women the capacity to decompose proteins and fats seems to be impaired, their diet should not contain too large quantities of these substances. On the other hand, carbohydrates are readily utilized; in fact, the pregnant organism is much more readily affected by a lack of carbohydrates than is the non-pregnant organism. Because of the tendency to the formation of edema and to nephropathic conditions, sodium chloride intake

has to be limited, but care should be taken that the pregnant woman receives adequate amounts of calcium, vitamins, iron and iodine. However, in spite of all precautions, eclampsia cannot always be prevented; if it does develop, conservative measures should be tried first.

Zeitschrift f. d. ges. experimentelle Medizin, Berlin

86: 595-863 (Feb. 7) 1933. Partial Index

- Respiration of Erythrocytes in Anemia. K. Damlé.—p. 595.
Modification of Normal and Pathologic White Blood Picture by Roentgen Irradiation. E. Hayer.—p. 623.
*Influence of Sex Hormones on Creatine Metabolism. F. Bühler.—p. 638.
Form of Stimulation Process in Normal Heart Muscle Element. F. Schellong.—p. 659.
Iodine Metabolism. A. Sturm and R. Schneeberg.—p. 665.
*Various Causes of Distortion of Electrocardiogram and Their Elimination. W. Gaarz, G. Grosz and J. Rihl.—p. 675.
Changes in Alkali Reserve and in Sugar Content of Bile Under Influence of Various Physiologic Stimulants: Action of Histamine, Epinephrine and Insulin. W. M. Karatygin and A. I. Hefter.—p. 697.
Investigation on Uric Acid Metabolism in Experimental Disorders of Kidney. L. Kürti.—p. 709.
Can Curative Effects be Expected from Percutaneously Absorbed Water in Comparison to Physiologic Action of Perforally Administered Water in Plants? E. Hiltner.—p. 716.
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Experimental Investigations on Organ Function Under Influence of Paravertebral Anesthesia. K. H. Erb and K. Thiel.—p. 728.
Significance of Reticulo-Endothelial System for Toxicity of Arspenamines and Metal Colloids. A. Hasskó.—p. 759.
Technique of Suture of Vessel. T. Naegeli and F. Meythaler.—p. 769.
Elimination of Water by Respiration: Water Vapor Tension of Respiration Air in Diabetes Insipidus. A. von Czike.—p. 772.
Determination of Resistance of Erythrocytes Against Osmosis and Saponin. J. Kaulbersz.—p. 778.
Isolation of Group Specific Agglutinogens of Erythrocytes. A. Jubász-Schäffer and A. Vannotti.—p. 809.
Functional Testing of Kidney by Means of Dyestuffs for Glomeruli and Tubuli. L. Németh.—p. 817.
Influence of Anesthetics on White Blood Picture of Rabbits. G. Stier and B. Levy.—p. 822.
Synthesis of Gastric Function. F. Brauch.—p. 829.
Lipase Content of Lymph of Ductus Thoracicus. A. Kálló.—p. 848.
Influence of Liver Extracts on Vital Storage of Liver and Spleen. H. Bittersohl and K. Neidhardt.—p. 854.

Sex Hormones and Creatine Metabolism.—Bühler studied the creatine metabolism and the decomposition of creatine by hormones following intravenous injection of 500 mg. of creatine. His observations were made on persons in whom sexual function had ceased, on patients with incretory disturbances, on two patients with disorders of the muscles, and on children before puberty. The parenterally administered creatine was eliminated always unchanged in form but not always in quantity. Following hormone administration, but under otherwise unchanged conditions, a considerable decomposition of the creatine became manifest. However, in prepuberal children this action of the hormones was absent, for the children still eliminated the largest portion of the creatine. The male sex hormone influenced creatine decomposition only in men and the female sex hormone only in women. In the reverse condition the decomposition was inhibited. This proves that the action of the sex hormones on creatine exchange is sex specific. The author also describes a new method for the determination of the creatine-creatinine values in the urine. This method employs the step photometer of Pulfrich. The superiority of this method over other colorimetric tests is that it makes the use of a comparative solution unnecessary and that the reading, which is based on a standard curve, is simple.

Distortion of Electrocardiogram.—Gaarz and his collaborators show that the study of changes in the auricular and ventricular complexes, in order to detect myocardial disorders, demands a more exact reproduction of the impulse current than does merely an analysis of rhythmic disturbances. In view of the growing significance of electrocardiography it is important to recognize distortions that may appear in the electrocardiographic curve. The authors discuss the distortions that have their origin in the apparatus. Perhaps the most annoying distortions are those produced by strong current generators and conductors, particularly, if, as is now generally the case, the alternating current is used. The interference fields originating in them may become so disturbing as to make the operation of the electrocardiograph impossible. After showing that the interferences produced by a strong current unit in a nearby electrocardiograph may be of galvanic, electrical or magnetic

nature, the authors discuss the means by which the disturbances can be eliminated, particularly the screening off of the electrocardiograph by metal protectors. Most of the disturbances caused by the patient are the result of muscular contractions that make the impulse current of the muscle appear in the electrocardiogram, or introduce currents into the electrocardiogram by causing displacements of the electrodes. In order to avoid distortions of this kind, care should be taken that the patient is completely at ease and relaxed. In many cases this will be sufficient but, if not, a sedative may be given some time before the test, or a discharging conductor must be employed. The author discusses the diagnostic errors that may be made if the distortions are not taken into consideration. For example, it may be difficult to decide whether there is a normal sinus rhythm in which the P deflection merely does not become clear, or whether an atrioventricular beat sequence is present in which the P deflections are masked by the QRS complex, or whether auricular fibrillation exists. In such cases the behavior of the rhythm may fail as a diagnostic aid, and the authors cite several other possibilities.

Zentralblatt für Gynäkologie, Leipzig

57: 497-544 (March 4) 1933

- *Prevention of Puerperal Eclampsia. E. Waldstein.—p. 497.
Encephalomalacia in Eclampsia. K. Klaus.—p. 508.
Early Pregnancy Toxemia. P. Hüsey.—p. 510.
Treatment of Vomiting of Pregnancy. E. Schaff.—p. 513.
Diabetes and Pregnancy. A. Eydung.—p. 514.
Conduct of First Stage of Labor. A. von Fekete.—p. 522.
Conduct of Labor in High Transverse Presentation. K. Burger.—p. 527.
*Method of Performing Legalized Abortion. S. Topuse.—p. 533.

Prevention of Puerperal Eclampsia.—In Waldstein's opinion, the incidence of puerperal eclampsia can be diminished by adoption of two measures: (1) artificial termination of pregnancy in patients with preeclamptic manifestations and (2) systematic examination of all women after delivery, paying particular attention to those manifesting preeclamptic symptoms and signs before and during delivery. The author found that patients with grave preeclamptic signs are less likely to develop puerperal eclampsia if delivered by operative means than the mild cases after spontaneous delivery. The beneficial effects of artificial delivery are due to the shortening of the time of labor and to the elimination of painful contractions, which tend to raise the blood pressure and to loss of blood. The author shares the view of Essen-Möller that preeclamptic signs exist before the delivery in all patients developing postpartum convulsions. To evaluate the efficacy of prophylactic measures, he presents two groups of patients. Group 1 comprises 21,474 women delivered between 1909 and 1927. No prophylactic measures were applied to the group. Group 2 comprises 10,737 patients delivered between 1927 and 1931, to whom the prophylactic measures were applied. In group 1 there were eleven cases of eclampsia developing during pregnancy, sixty-one at the time of delivery and forty-five in the puerperium, a total of 117 cases of eclampsia. In group 2 there were eight cases developing during pregnancy, fifteen at the time of delivery and five in the puerperium, a total of twenty-eight cases. Bearing in mind that the numerical relation between the two groups is as 2:1, it is seen that the number of eclampsias developing in the course of pregnancy but before delivery was greater in group 2 but that the number of eclampsias during delivery diminished by one half and the number of puerperal eclampsias was still smaller. The general incidence of eclampsia in the preprophylactic group was 1 in every 352 deliveries, in the prophylactic group 1 in 715. The incidence of puerperal eclampsia was 1 in 427 for group 1 and 1 in 2,147 for group 2. In group 2 there were five instances of puerperal eclampsia, an incidence of 0.46 per cent, as compared with that of 2.1 per cent of group 1. In discussing the influence of operative termination of labor and of spontaneous delivery on the development of puerperal eclampsia, the author points out that there were 471 patients in group 2 manifesting preeclamptic symptoms. Of these, 111 pregnancies were artificially terminated without development of puerperal eclampsia in a single instance. The five instances of puerperal eclampsia in this group took place after spontaneous delivery. Among the therapeutic measures adopted in the treatment of patients manifesting preeclamptic symptoms, the author emphasizes the salt free diet, and restriction of food and fluid intake to a point of starvation for the patients in a graver condition. Those in a mild con-

dition are allowed 0.5 liter of fluids daily in the form of fruit juices or tea, and carbohydrate food, preferably zwieback and fruit. Dehydration was accomplished by the use of diuretics, especially of theobromine and of thyroid preparations, and by the use of saline cathartics. The author advises against venesection on the ground that its effect is transient and that one cannot predict the amount of blood the patient will lose during delivery. Incisions into a rigid cervix, as advised by Scanzoni, were found of service in shortening the stage of cervical dilatation and making safe earlier application of forceps.

Method of Performing Legalized Abortion.—Topuse reports on 14,270 abortions performed in three hospitals of the city of Winnitza (Ukraine) from 1927 to 1931. It was noted that during the same period the number of spontaneous abortions diminished. The largest proportion of abortions, 88 per cent, were performed before the end of the third month of pregnancy. The author is opposed to all methods of abortion by induction of labor pains on the ground that any method which tends to keep the cervix open leads to infection. The author follows the method universally adopted in Russia of dilating the cervix with Hegar dilators and emptying the uterus. The injection of 10 cc. of 1 per cent solution of procaine hydrochloride into the posterior vaginal wall results in satisfactory anesthesia within ten minutes. The uterus is not packed. Patients are hospitalized for four days. There was not a death in 14,000 cases. A rise of temperature up to 38 C. (100.4 F.) occurred in 1 per cent of the cases. Four patients had higher temperature. Two of these developed a severe parametritis with subsequent abscess formation, one developed a unilateral adnexitis, while one developed a pelvic peritonitis of probable gonorrheal origin. All four patients recovered. Perforation, the most dreaded of all complications, occurred eight times, an incidence of 0.06 per cent. Termination of pregnancy advanced beyond three months was accomplished by vaginal cesarean section after the method of Dührssen, 145 such sections being performed without a fatality. The author concludes that, while the number of induced abortions was on the increase, the number of spontaneous abortions was on the decrease. The method of choice for patients under three months is operative dilation of the cervix and emptying of the uterine cavity at the same time.

Finska Läkaresällskapets Handlingar, Helsingfors

75: 1-101 (Jan.) 1933

- *Notes on Achylia. O. Mustelin.—p. 28.
- Spondylolisthesis. G. Wallgren.—p. 40.
- Remarks on Red Hot Iron and So-Called Bier's Caustery Together with Some Attempts with It. W. Sjöholm.—p. 56.

Achylia.—Mustelin says that of his 400 cases of achylia a scant third were caused by cancer of the stomach. Fully 10 per cent of the remaining cases were due to pernicious anemia, and a considerable number probably were caused by chronic gastritis. At least one fifth of all cases, not including those with cancer and pernicious anemia, are ascribed to a degenerative milieu and correspond to Martius' simple or constitutional gastric achylia.

Hospitalstidende, Copenhagen

76: 1-28 (Jan. 5) 1933

- Intervertebral Disks: Review. H. Scheuermann.—p. 1.
- Bulbocapnine Catalepsy. M. Ellermann.—p. 17.
- *Fatal Pernicious Anemia Without Anemia: Case. T. E. H. Thaysen.—p. 23.

Pernicious Anemia Without Anemia.—Thaysen states that his case illustrates that the blood changes in pernicious anemia are only one link in the symptom complex of the disease and that liver treatment, even though it brings the hemoglobin percentage up to normal, does not protect against the development of a degeneration in the central nervous system which can cause death without the establishment of any localized cerebral disorder. Treatment with desiccated hog stomach in doses corresponding to 300 Gm. of fresh stomach had no effect on the symptoms of the central nervous system.

76: 57-84 (Jan. 19) 1933

- Sterilizing of Surgical Instruments and the Like. L. E. Walbum.—p. 57.
- *Age of Patients with Pernicious Anemia. S. A. Holbøll.—p. 72.
- Meincke Clarification Reaction in Syphilis. H. Boas and Elvira Oigard.—p. 79.

Age of Patients with Pernicious Anemia.—Holbøll finds that essential pernicious anemia in Denmark occurs about twice as often in women as in men. The average age at the beginning of the disease is about 55 years for both sexes. In no more than 2 per cent of all cases does the disease manifest itself before the age of 30, and its occurrence in childhood is extremely doubtful.

Hygiea, Stockholm

95: 33-80 (Jan. 31) 1933

- *Case of Actinomycosis of Pelvic Organs in Woman. G. Ahltopp.—p. 33.
- Aschheim-Zondek's Pregnancy Reaction and Experiences with It. F. Settergren.—p. 45.

Actinomycosis of Pelvic Organs in Woman.—Ahltopp's case, probably salpingo-oophoritis and actinomycotic parametritis, objectively presented a pelvis resistance of varying size. After one and a half years' observation, fistulas broke through in the left gluteal region; actinomycotic granules were found in the pus. Roentgen and potassium iodide treatment and drainage of the gluteal abscesses resulted in a temporary improvement, followed by aggravation and death about seven months after the diagnosis of actinomycosis.

Norsk Magasin for Lægevidenskapen, Oslo

94: 121-240 (Feb.) 1933

- Have Exogenous Factors in Pregnancy any Influence on State of Nutrition of the New-Born? K. U. Toverud.—p. 121.
- Sedimentation Reaction in Pneumonia. K. Motzfeldt.—p. 141.
- *Hepatogenic Diabetes. K. Motzfeldt.—p. 148.
- *Rubeola-Encephalitis. K. Motzfeldt.—p. 153.
- *Roentgenograms in Persons Rescued from Drowning. A. Klingenberg.—p. 156.
- *Anaphylaxis After Wasp Stings. J. D. Arntzen.—p. 160.
- Psychic Disturbances in Multiple Sclerosis. L. Melsom.—p. 165.
- Trifocal Glasses for Cataract. S. Holth.—p. 168.
- *Investigations on Liver Function in Mental Diseases, with Especial Regard to Relation Between Diseases of Liver, Enterogenic Intoxication and Undernutrition in Schizophrenia. A. Lingjærde.—p. 170.

Hepatogenic Diabetes.—Motzfeldt says that his patient with true, temporarily grave diabetes, probably had had a latent disorder rapidly aggravated by an infectious disturbance. Simultaneously with the diabetes a grave liver disorder was established. On regression of the diabetes the enlarged liver gradually decreased in size. The case was relatively insulin resistant. In the four years since treatment was administered, the patient, under constant control, has been well. In hepatogenic diabetes and other "paradiabetic" forms the possibility of recovery may be considered.

Rubeola-Encephalitis.—Motzfeldt's case of encephalitis after rubeola, believed to be the fifth reported, was characterized by the sudden onset of coma, hyperpyrexia and marked athetosis, four days after the appearance of the eruption. Death occurred after twenty-four hours. Necropsy revealed a generalized inflammation of the brain, especially of the white matter. The histologic picture closely resembled that in a case of encephalitis after measles previously reported by the author (*Norsk mag. f. lægevidensk.* 91:481 [May] 1930).

Roentgenograms in Persons Rescued from Drowning.—Roentgenograms of the lungs of two patients, made thirty-four and seven hours, respectively, after their rescue from the point of drowning, showed dense diffuse shadows resembling infiltrations of the lungs and ascribed to atelectasis or possibly edema of the lungs. Klingenberg states that the shadows entirely disappeared after three and five days, respectively.

Anaphylaxis After Wasp Stings.—The four grave cases following a single wasp sting, of which two were fatal within an hour, described by Arntzen, are attributed to an abnormal hypersensitiveness to the proteins of the fluid injected by the sting, and not to the toxins.

Liver Function in Mental Diseases.—Lingjærde found that, in the active phase of schizophrenia, disturbances of the liver function are frequent, and necropsy not infrequently shows grave degenerative changes in apparently uncomplicated cases. Intestinal intoxication and malnutrition are considered causes. He concludes that the increased urobilinuria often noted in schizophrenia and other mental disorders is largely due to a carbohydrate deficiency in the diet and indicates increased administration of carbohydrates (and possible treatment with insulin). His investigations give no definite answer as to the possible rôle of liver disorders in the pathogenesis of schizophrenia.

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PROFESSIONALIZATION IN PUBLIC HEALTH SERVICE

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The term "professionalization" as employed in this discussion refers to the establishment of suitable educational and professional standards for public health personnel. In the older professions of medicine, law and dentistry, it became necessary to protect the public against unqualified practitioners, many of whom held diplomas. This was done through the establishment of qualifying boards.

Consideration of the situation in respect to public health raises a number of questions, a few of which are as follows: Is public health service a specialty of medicine? Is it so distinct from medicine as to warrant its being regarded as a new and separate profession? Has sufficient progress been made to warrant the adoption of qualification standards for the personnel? Should the examinations required of health officers be open only to physicians? Should suitable examinations be offered and certificates awarded to personnel necessary in health organizations, other than the health officers, such as sanitary engineers, statisticians, bacteriologists, chemists and nurses? Are appointing executives and boards able to distinguish the qualified health officer or health worker from the unqualified? If not, should suitable qualifying agencies be created? Should health officers and other health workers be required in the future to have degrees or certificates from reputable universities, or from an authoritative qualifying agency, in order to be eligible for employment in public health organizations?

QUALIFICATIONS

Should the qualifying agency be state or national? If on a national basis, should it have a federal status or should it be an unofficial agency such as is the National Board of Medical Examiners? If the National Board of Medical Examiners should so enlarge its scope as to embrace public health, would it be able to satisfy all requirements? Would it be feasible for the national qualifying agency not actually to conduct examinations but instead to investigate courses offered by universities and accept those degrees which satisfy required standards? Although it is not my purpose to discuss each of these questions, observations on certain factors involved may be in order.

A vast store of knowledge and experience in the field of public health has been assembled. The material

has been classified and ordered so that it now affords a basis for the guidance of health organizations and for university courses of instruction. Much of our knowledge of public health has been derived from modern medicine, but knowledge essential to public health practices has been drawn also from engineering, statistics, epidemiology, economics, sociology and public education. In each field the available knowledge had to be adapted to serve community needs. It had to be coordinated with the knowledge derived from other fields. The approach during the past twenty years or more to a science of public health has been an evolution through trial and error methods applied in the school of experience.

The modern school of medicine supplies to the health officer knowledge that is essential and not elsewhere obtainable. The health officer needs training in such subjects as anatomy, physiology and pathology; the individual in health and in sickness; diseases—their cause, mode of spread, prevention and cure; maternity, infancy, childhood and adult life; the various hygienes and nutrition, and many other subjects that bear both on individual and on community health. Medicine is indeed broad in scope and most phases of it are indispensable to the health officer.

The medical school usually centers interest on the individual patient, whereas the school of public health focuses interest on the community. The community as a whole is the patient of the health officer. Individuals are considered only as they affect the health welfare of others. As it is exceptional for the instruction in medical schools to emphasize community interests and public health subjects, the usual medical graduate desiring to qualify as a health officer needs additional training in public health and some practical experience. Likewise the graduate in civil engineering is not qualified for public health service until his knowledge and point of view are adapted to community needs, and until he has taken additional training in the sanitary sciences such as usually are required by reputable universities for the degree in sanitary engineering.

Public health service as a vocational field is new because modern medicine on which, to a large degree, it is based, is itself comparatively new. Hence a large percentage of the present health officers, although physicians, have had no special university training in public health. Such knowledge as they possess, aside from medicine, has been acquired from observation, reading and experience.

STANDARDS OF ELIGIBILITY

In recent times, university courses in public health have been organized. The movement in Great Britain is older than in the United States and Canada. There the medical act of 1886 made provision for the registration of diplomas in sanitary science, and such registra-

tion became necessary for eligibility to health officer positions in Scotland in 1897 and in the United Kingdom in 1926. Twenty-two universities of Great Britain have for many years been granting diplomas in public health, state medicine or sanitary science. Since 1931 the time required for a physician to secure the diploma of public health has been eighteen months: nine months of full time university work, three months' service in an infectious disease hospital, and six months of practical experience under a medical officer of health. Two years must elapse after medical registration before the registration of the public health diploma is permitted. Gradually a reserve of personnel satisfying the legal requirements for health officers has been built up so that the enforcement of eligibility standards in Great Britain is now comparatively easy.

In the United States and Canada there are seventeen institutions offering degrees in public health. Harvard University Medical School granted its first doctorate in public health in 1911; the University of Pennsylvania Medical School in 1912; and the Harvard Medical School and Massachusetts Institute of Technology in 1914. A later development was the establishment of schools of public health, the first of which was that of Johns Hopkins University, which graduated its first class in 1919, followed by Harvard University School of Public Health in 1923, and Toronto University School of Hygiene in 1928. In table 1 are listed the seventeen institutions granting degrees and the number of degrees granted by each. It will be noted that there were 107 graduates in 1930, 176 in 1931, and 147 in 1932. About eight universities now offer degrees in sanitary engineering, and eighteen institutions in the United States and Canada offer diplomas or degrees in public health nursing. The numbers of diplomas or degrees in public health nursing granted by these institutions were for the past three years (1930) 237, (1931) 283 and (1932) 313, respectively.

Although health departments—national, state and local—are employing trained health officers in increasing numbers and as a rule have been pleased with their work, the movement is still of recent growth and is limited in scope. It may be expected to gain momentum from year to year. Many appointing authorities—governors, mayors and boards of health—are still insufficiently impressed with the desirability of having suitable eligibility standards for personnel. Human life and health and public funds are at stake. Authorities should welcome the guidance of a qualifying agency in making appointments.

In Canada the laws of all the provinces except Alberta and Saskatchewan require that the health officer, usually designated as Deputy Minister of Health, be a qualified physician. In New Brunswick, in addition to being a physician, he must have a diploma in public health. Irrespective of legal requirements, all provincial and local health officers in Canada are physicians.

The United States Public Health Service has established professional eligibility standards for its personnel. Examinations are conducted as a basis for admission to the service and for promotion. The medical officers have received public health training and experience in the service. In recent years, some of the new appointees have held diplomas in public health. In addition to medical officers, the service includes sanitary engineers, dentists, nurses, pharmacists and technicians.

Of the forty-eight state health officers, forty-seven are physicians, but the laws of only thirty-eight states specify that the health officer shall be a physician. In

three states the ranking health executive, the commissioner of welfare, is a layman, and in each case a physician as health officer is his subordinate. Four states have no legal requirements and one merely prescribes that he must be a citizen and a voter. The laws of twenty-seven states require that the health officer be a physician, and moreover be "trained in," "skilled in," "informed in" or "experienced in" "public health," "sanitary science" or the like. The only legal reference

TABLE 1.—Number of Degrees in Public Health Granted in the United States and Canada During 1930, 1931 and 1932*

School	Degrees	No. of Degrees Granted		
		1930†	1931†	1932†
Columbia University College of Physicians and Surgeons	M.S. Ph.D.	0 0	1 0	8 0
Harvard University School of Public Health	M.P.H. Dr.P.H.	6 1	13 1	9 0
Johns Hopkins University School of Hygiene and Public Health	C.P.H. M.S. Sc.D. in Hyg. Dr.P.H.	24 0 14 5	32 3 19 15	33 1 12 5
McGill University School of Medicine....	D.P.H.	0	2	1
Massachusetts Institute of Technology	B.S. M.S. C.P.H. Dr.P.H. Ph.D.	8 0 4 1 0	16 2 4 0 0	10 2 0 0 1
Ohio State University.....	M.S.	1	1	0
Queen's University	D.P.H.	0	0	0
University of California.....	A.B. M.A. Dr.P.H. Ph.D.	5 1 0 0	4 0 0 0	3 0 0 0
University of Chicago.....	M.S. Ph.D.	2 2	2 4	4 3
University of Georgia.....	B.S. M.S. Dr.P.H.	2 1 1	3 1 0	1 2 0
University of Michigan.....	M.S. Dr.P.H.‡	5† 1	0† 1	16 2
University of Minnesota.....	M.A. M.S. Dr.P.H. Ph.D.	1 0 0 0	0 2 1 0	0 4 0 1
University of Montreal.....	D.P.H.	0	0	0
University of Pennsylvania.....	M.S. Dr.P.H. M.A. Ph.D.	0 0 0 0	7 1 2 1	4 0 0 1
University of Toronto.....	D.P.H. M.A. Ph.D.	12 1 0	13 0 0	14 0 2
University of Western Ontario.....	D.P.H. Dr.P.H.	0 0	0 0	0 0
Yale University School of Medicine.....	C.P.H. M.S. Dr.P.H. Ph.D.	3 1 1 1	6 2 2 6	2 0 0 6
Total.....		107	176	147

* This table excludes degrees in sanitary engineering and public health nursing. Public health nursing certificates or degrees were reported by 16 educational institutions in the United States as follows: 215 in 1930, 251 in 1931, and 278 in 1932.

† Figures for 1930 and 1931 (with the exception of those for the University of Chicago) quoted from published reports of the American Public Health Association's Committee on Training and Personnel; figures for 1932 (and for the University of Chicago for all three years) obtained directly from the university authorities.

‡ Figures as corrected by the university authorities.

§ Although called D.P.H. at the University of Michigan, this is really a Doctor of Public Health degree and not a diploma in public health.

to a degree of doctor of public health is in the Michigan law, where it is mentioned as an alternative to five years' experience as a practicing physician.

The laws of only twenty-two states prescribe legal qualifications for local health officers. I have been unable to study carefully the nature of these requirements, but the information available as to practice speaks for itself. At the close of 1931 there were 596 full time county health organizations in thirty-six states. The health officers of all were physicians, except three, one of whom was a veterinarian, one a doctor of philosophy in bacteriology, and one a dentist.

HEALTH OFFICERS OF CITIES

There are 967 cities in the United States with 10,000 inhabitants or over.¹ Of these, 416 (43 per cent) employ full time health officers, of whom 265 (64 per cent) are physicians and 151 (36 per cent) are not. The 151 lay health officers are serving in twenty-five states. Forty-one of them are distributed in twenty-two states (one state has six, three states have four, five states have two, and thirteen states have one) and 110, or 73 per cent, are serving in the three states of Massachusetts, New Jersey and Pennsylvania. In these three states there are 220 cities of 10,000 inhabitants or over, of which 126 have full time health officers, of whom sixteen, or 13 per cent, are physicians, and 110, or 87 per cent, are not physicians:

The cities smaller than 10,000, not embraced by county health organization, may occasionally have full time health officers, but generally the health officers serve on a part time basis; some are physicians and many are not.

In the United States there are ninety-three cities having 100,000 inhabitants or over, and representing 30 per cent of the total population of the country. Of these cities twenty have part time medical health officers and seventy-three have full time health officers, sixty-seven of whom are physicians and six are not.

TABLE 2.—Health Officers

State	Number of Cities of 10,000 or Over	Full Time Health Officers, Number	Health Officers Physicians		Health Officers Not Physicians	
			Number	Per Cent	Number	Per Cent
Massachusetts...	73	37	5	13	32	87
New Jersey.....	55	31	4	13	27	87
Pennsylvania....	92	55	7	12	51	88
	220	120	16	13	110	87

In some states and cities, civil service has been adopted for the personnel of government, including public health. Generally it applies to subordinate personnel, technical and clerical, but not to the health officers.

This review of the practice in the United States reveals that although health officers are usually physicians, the exceptions are numerous. Generally it is recognized that it would be of advantage to the health officer to be a qualified physician and eligible to participate in medical meetings.

PUBLIC HEALTH TRAINING

It has been questioned whether the time and cost of preparing for public health service might not be reduced by omitting certain courses required in medical school, such, for example, as surgery, and devoting the time thus saved to courses essential for public health service. The late Professor Sedgwick, who was a pioneer in giving courses in public health at the Massachusetts Institute of Technology, has been quoted as expressing the following opinion:

Instead of the present rigid medical curriculum which resembles the capital letter I, we ought today to have a new curriculum of equal height and breadth, but shaped like the capital letter Y, of which the base should still be substantially the first two years of the present curriculum—anatomy, physiology, bacteriology, pathology, etc., but with the upper parts diverging, the one arm or branch leading as now in the last two years to the degree of Doctor of Medicine (M.D.) and the other in the last two years to the degree of Doctor of Public Health (D.P.H.).

A number of Professor Sedgwick's students, not physicians, are now in health work; a few could not obtain satisfactory employment and entered other fields or later completed the requirements for the medical degree. The wider range of opportunity afforded by a medical degree is a factor to be considered by the student.

PROFESSIONAL STANDARDS

In any consideration of plans for establishing eligibility standards for public health personnel, it is essential to decide the question whether public health shall be classified as a specialty of medicine or as a separate, though related, profession. If public health service should be legally or otherwise established throughout the country as a specialty of medicine, or a specialty for which a medical degree is a prerequisite, the present facilities for passing on medical qualifications could be expanded to include public health.

Public health service in this country has grown rapidly. Professional standards have not been uniformly adopted and there is no reservoir of trained personnel available. This is especially true of trained medical health officers. This situation, unfortunately, is about to change through the slashing of budgets. Eligibility standards based on public health training cannot be enforced uniformly until one or more eligible candidates are available for every vacancy. Whatever standards may be adopted, it is certain that the transition will be slow.

There are now a large number of nonmedical health officers. In our best health organizations that have medical officers there are many nonmedical health workers with university training. They constitute an essential part of a well rounded health organization. They consider themselves entitled to a dignified status and they insist on being included in any scheme for establishing eligibility standards for health officers. As their basic education, in many instances, was not acquired in medical schools, they believe it is not feasible for medical examining boards, state or national, as now constituted, to conduct examinations for them. If qualifying agencies restricted to public health are to be established, they think important groups, such as engineers, nurses, statisticians and bacteriologists, should also be provided for.

A number of physicians, some of whom are health officers, advance the opinion that the medical officer of health alone should be considered in connection with qualification standards. In their opinion the nonmedical workers are his subordinates and he can pass on their qualifications by considering their university degrees and experience. This is open to the objection that it might give rise to two thousand or more different standards, as each health officer or board of health could set up eligibility standards. Forty-eight different state standards likewise are undesirable. A single standard, applicable to each group of workers and recognized throughout the country, would be of advantage to the appointing authorities, the public, the persons who have or who may take training, and the universities which supply the training. The wide range of opportunity for employment which a national qualifying agency might insure would tend to attract able personnel to the field of public health. There would be opposition in many states to a legalized federal qualifying agency on the ground that it would tend to federalize state and local health services.

In the field of medicine the National Board of Medical Examiners, a voluntary agency, has avoided such

1. City Health Officers, Pub. Health Rep. 46:2921 (Dec. 4) 1931.

objections and has built up prestige as a national agency. Its more than 3,000 diplomates are recognized without additional examination in forty-two states, Puerto Rico, the Canal Zone, Hawaii, the United States Army, and the United States Public Health Service. It has twenty subsidiary boards suitably located throughout the country. It has been asked to consider expansion to include the specialties in medicine. If in the field of public health only physicians were eligible, public health could be included as a medical specialty.

Should consideration be given to the creation of a new qualifying agency restricted to public health, or could the National Board of Medical Examiners enlarge its name and scope so as to include all branches of public health? An existing agency could expand its scope and quickly inaugurate new work, whereas to establish an entirely new agency takes time. In either case, the qualifying agency would either have to conduct examinations or pass on universities and the courses they offer. The task might be simplified by merely accepting degrees from universities that satisfy approved standards. The National Board of Medical Examiners has not followed this plan, but it has to some extent found favor with the General Medical Council of Great Britain.

CONCLUSION

The foregoing questions and observations are submitted with the hope of provoking discussion that will be of help in establishing such professional standards for public health personnel as will guide the appointing authorities, aid the universities offering courses of instruction, and at the same time furnish protection to the public.

61 Broadway.

THE TREATMENT OF HAY FEVER AND POLLEN ASTHMA BY AIR-CON- DITIONED ATMOSPHERE

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BALTIMORE

Through the kindness of the Frigidaire Division of General Motors, the opportunity was afforded to study the effect of air-conditioned atmosphere on individuals suffering with symptoms of hay fever and pollen asthma.

A room large enough to accommodate four bed patients was equipped with a Frigidaire air-conditioning unit. The room had five windows, and a door opened on the corridor of the Osler Clinic. These windows and the door were kept closed but not sealed; consequently outside air entered the room under the door, through the cracks of the windows, and through the door when it was opened during the routine care of patients.

Air conditioning, when applied to enclosures for human occupancy, may be defined as the adjustment of temperature, humidity and moisture to provide comfort and health. In summer the temperature and the relative humidity must be lowered; in the winter the temperature and the relative humidity must be increased. In both cases the motion of the air must be controlled.

By the use of a cooling apparatus, temperature, which is recorded by dry bulb readings, can be easily

changed. Relative humidity is the percentage of moisture which the air contains at a certain dry bulb temperature. As the air increases in dry bulb temperature, it has the ability to carry more grains of moisture. Relative humidity can be determined by the differential in the readings of the dry bulb and wet bulb thermometer or it can be determined by instruments designed for this purpose, constructed of hairs, certain woods and other articles, which will expand and contract, depending on the different moisture content of the air. In this investigation, Hygro-Thermograph charts were used, the upper portion recording dry bulb readings and the lower portion recording the relative humidity at given dry bulb temperature.

This particular problem deals with summer temperature. The control of temperature and relative humidity in the Frigidaire equipment is accomplished with a cooling coil in an air-conditioning unit. The air is forced over this cool coil by fans and is lowered to a predetermined temperature, a temperature at which it will hold only a certain amount of moisture. The excess moisture condenses out of the air, passing from the instrument into a drain pipe. After the air passes over this cooling coil the air temperature is between 40 and 50 F. and at that temperature is about 100 per cent saturated with moisture. This air, diffusing with the air in the room and warmed by the heat coming in through the walls, through the cracks under the door and from other sources, such as that given off by body heat and electric lights, rises in temperature and in so doing is lowered in relative humidity. The excess moisture which condenses out of the air as water and which runs into the drain pipe carries with it practically all dust particles and grains of pollen which are blown over the cooling coil.

Throughout the period of the experiment, the temperature was maintained 10 degrees below the outside temperature in the open ward and the humidity was maintained at 40 per cent, which is an ideal atmosphere. It should be mentioned that the humidity during the months of August and September in the outside atmosphere at times was as high as from 80 to 90 per cent.

To study the air-cleansing efficiency of the instrument from the standpoint of pollen, a glass slide covered with a thin film of petrolatum was placed in the room before the apparatus was operated, so that pollen in the air might circulate across this greased surface. A slide was placed in the courtyard of the hospital as well as in the adjoining ward to compare the number of grains in this room with those in the outside atmosphere and the atmosphere of the ward.¹ These slides were changed every day for a period of four days and the pollen grains were counted. The pollen counts closely corresponded on the three slides. The air-conditioning apparatus was then put into operation, and every day thereafter pollen counts were made on the slides in this room, in the ward, and in the hospital courtyard. Slides exposed in places far removed from the hospital were used for control counts. Whereas the slides outside in the court and in the ward showed a count of from 10 to 30 grains of ragweed pollen per square centimeter, the slide in the air-conditioned room showed no pollen (chart 1).

Attention is directed to the high pollen count in the air-conditioned room, September 23. On the

From the Protein Clinic of the Medical Department of the Johns Hopkins Hospital.
Read before the Society for the Study of Asthma and Hay Fever, Washington, D. C., May 6, 1933.

1. Acquarone, Paul, and Gay, L. N.: A Survey of the Pollen Flora in Baltimore During 1929, *J. Allergy* 2: 335 (July) 1931. Patterson, P. M., and Gay, L. N.: The Pollen Content of the Air and Its Relation to Hay Fever in Baltimore, Maryland, During 1930, *ibid.* 3: 282 (March) 1932.

morning of this day, when patients were not occupying the room, several grams of dry ragweed pollen were distributed in the atmosphere. The high count was therefore expected. Twenty-four hours after this distribution the microscopic examination of the slide showed an absence of pollen. To determine just what became of the pollen that was not found on the slides in the air-conditioned atmosphere, it was necessary to make a study of the condensed moisture that came through the cooling apparatus into the drip pan. Each day this excess moisture was filtered through large papers, and after the paper had dried the sediment was studied microscopically. Without exception the papers showed a large accumulation of dust and numerous grains of ragweed pollen. The paper through which the water was filtered on the day of the distribution of pollen, September 23, contained an overwhelming number of ragweed pollen grains.

The efficiency of the cleansing principle having been established, the effect of this room on untreated subjects with hay fever was studied.

On different days, groups of ten patients were sent to this room and observed to determine the effect on their symptoms. In the individuals suffering with symptoms of hay fever uncomplicated by asthma, a striking change was noted in from ten to fifteen minutes. Within an hour the symptoms had entirely subsided and after two hours the individuals, who had previously been most miserable, had no evidence of hay fever. These patients were then returned to the rooms of the clinic. Within fifteen minutes, symptoms developed and in an hour these patients were as miserable as when they first went into the room. Patients who were suffering not only with hay fever but also with pollen asthma did not respond quite so rapidly, although within an hour

suffered for the first fifteen hours with moderate wheezing; however, the symptoms were quite mild compared with the hours of discomfort previous to admission to the air-conditioned atmosphere. After thirty-six hours, these patients slept comfortably throughout the night and, although there was occasional coughing, the result of this therapeutic measure was most satisfactory.

The fourth step in the experiment was to determine the effect of this room on individuals who spent the night in the room but who went into the outside air

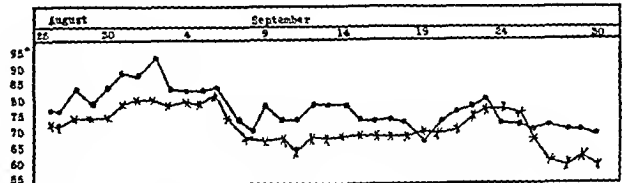


Chart 2.—Comparison of ward temperature (dots) and air-conditioned room temperature (x's) at a fixed time (9 a. m.). The close comparison of the readings suggests that the temperature alone is not responsible for the comfort of the patients.

occasionally during the day. One could at will cause a return of symptoms by sending the patient into the outside air and then relieve the symptoms by having the patient return to the room (protocols 3 to 8).

Controls, of course, were constantly available during the time these patients were in the room. Other patients in the clinic who had not been given the routine treatment of desensitization suffered continuously. One can therefore say that individuals with pollen asthma and pollen hay fever can be greatly relieved of their symptoms if they can spend their time in an air-conditioned atmosphere. The economic factor is, of course, a consideration.

The relief of patients by this method depends primarily on the cleansing of the atmosphere and secondarily on the chilled air that is inhaled. Chilled air with pollen, however, will produce as severe symptoms as warm air saturated with pollen. This feature was demonstrated by cutting off the cooling apparatus of the equipment and by continuing the fan, which did nothing more than circulate the air continuously for twenty-four hours, and which, because of nonfunctioning of the cooling apparatus, did not remove pollen granules. A group of four patients, free from symptoms after having been in the air-conditioned atmosphere for twenty-four hours, complained bitterly of hay fever and asthma while the fan circulated the air without the aid of the cooling and condensing apparatus.

In chart 2 a comparison of the temperature in the air-conditioned room with the temperature in the ward shows that at 9 o'clock in the morning the ward temperature paralleled closely the temperature in the room. The difference in the two atmospheres was simply the difference between an atmosphere free from pollen and an atmosphere that contained pollen. In the Hygro-Thermograph charts, comparison between the temperature and the humidity in the room with the temperature and humidity in the ward was recorded. These charts were maintained throughout the entire period of the experiment from August 22 to October 1. Each day the instrument was taken from the air-conditioned room and kept in the ward from 12 o'clock noon until 2 p. m. An elevation in both temperature and humidity was demonstrated by the graphic lift of the needle at the mentioned time. On the same chart the United States Meteorological Record was recorded. The maintenance

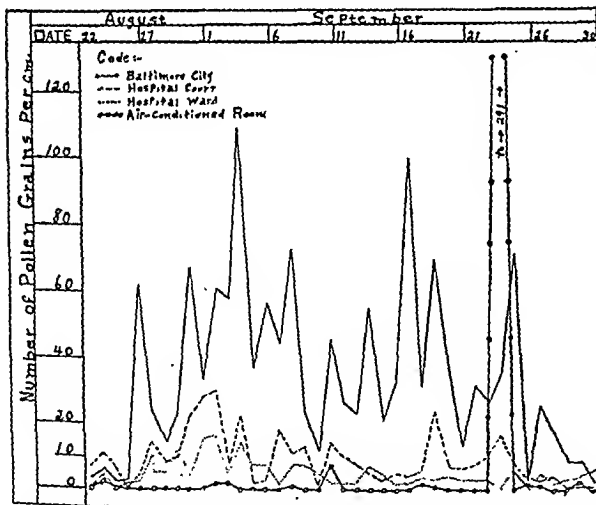


Chart 1.—Pollen counts made during the period of the experiment: Attention is directed to the high peaks of the pollen count found on the Baltimore City slide. This slide was placed in an area less protected by buildings than the slide placed in the hospital court.

there was a striking improvement in their general condition (protocols 1 and 2).

The next step in the experiment was to observe the effect of hospitalization of patients who suffered with hay fever or pollen asthma. The patients who had ragweed hay fever improved rapidly on admission to the room and in one hour were free from symptoms. They experienced no discomfort whatever for a period of forty-eight hours during which time they were confined to this room. The patients who had pollen asthma

of even temperature and humidity in the air-conditioned room was striking compared to outside atmospheric conditions.

The treatment of individuals suffering with bacterial asthma was unsuccessful in air-conditioned atmosphere. These patients were sufferers of severe asthma of perennial type due to bacterial infection in the upper respiratory tract. Protocols of these patients (cases 9 and 10) show that they had increased symptoms within a few hours after admission to the room and they were finally discharged more uncomfortable than when they were admitted for treatment.

SUMMARY AND CONCLUSIONS

The experiments in the treatment of pollen hay fever and asthma with air-conditioned atmosphere represent a new method of attack. The efficiency of the system used in the experiment has been demonstrated with most satisfactory results. The apparatus not only cools the atmosphere but cleanses it of dust and pollen grains. Even temperature and humidity were readily maintained throughout the period of the experiment.

Complete relief was given to patients suffering with symptoms of hay fever, whether they occupied the room for several hours or for longer periods of time. Striking relief was given to patients suffering with pollen asthma within twelve hours after admission to the room. Control cases did not respond in a satisfactory manner; in fact, by occupying this room the symptoms were increased. The relief of patients apparently depends not only on the cooling of the atmosphere but also and chiefly on the fact that the atmosphere is cleansed of the offending agents.

Unfortunately, when patients were discharged from the room to the outside atmosphere their symptoms returned with equal severity. For economic reasons, therefore, in the average individual suffering with hay fever the method is as yet not satisfactory, but to those individuals who can afford to install such a system, whether in their home or in their office, great relief can be offered.

PROTOCOLS

PROTOCOL 1.—Ten patients suffering with severe symptoms of hay fever were admitted to the air-conditioned room at 10 a. m., Aug. 29, 1932. Their symptoms were referable to the eyes as well as to the nose. Within fifteen minutes, striking improvement was observed by the patients and after one hour the patients' symptoms practically subsided. After discharge from the air-conditioned room, the patients were observed and their symptoms returned within one hour.

PROTOCOL 2.—Ten patients who came to the dispensary complaining of both asthma and hay fever were admitted to the air-conditioned room at 10 a. m., August 31. In this group the eye symptoms seemed to be more disturbing than the rhinitis, and at the same time several of them were quite asthmatic. By 12 o'clock noon, all symptoms had subsided and the patients were quite comfortable. Two asthmatic subjects still continued to cough. After discharge from the air-conditioned room, the patients were observed and their symptoms returned within one hour.

PROTOCOL 3.—S. D., a woman who had suffered with hay fever for many years, was admitted to the air-conditioned room at 3 p. m., August 29. Her chief symptoms were referable to the eyes and nose. She was quite miserable. At 5 p. m. relief was striking. She spent the night in the hospital free from symptoms. On discharge from the room the following morning, her symptoms immediately returned.

August 30, she returned to the room at 3 p. m. with severe nasal and eye irritation. Within an hour her symptoms had again subsided. She spent the night free from symptoms and was discharged at 11:30 a. m., September 1. Within fifteen

minutes after leaving the room she complained of recurrence of symptoms and there was slight oppression in her chest.

PROTOCOL 4.—S. O., a woman, came to the dispensary complaining of excessive eye and nose irritation, shortness of breath and persistent coughing, which caused slight asthma. She was admitted to the air-conditioned room at 12 noon, August 29. She noted relief of symptoms at 12:30 and complete relief at 2 p. m. During the night she had considerable sneezing, cough and some wheezing, although much less than the previous night at home.

August 30, at 3 p. m., all nasal and eye symptoms had subsided. She had a splendid night and remained in the hospital until 11:30 a. m., August 31.

September 2, she reported to the dispensary, having been miserable since discharge from the hospital. Curiously enough, however, her symptoms were limited to the nose and eyes.

September 7, she reported again with a similar history—very persistent nasal and eye symptoms but no asthma.

PROTOCOL 5.—E. N., a woman, came to the hospital in extreme distress due to pollen asthma. She gave a history of having had recurring attacks of pollen asthma for a number of years. She was admitted to the air-conditioned room at 2 p. m., August 31. Her nose and eye symptoms made her very uncomfortable and she was in a typical asthmatic attack. No medication was given. At 4:30 p. m. no apparent change was observed by the patient excepting that she had less irritation of her eyes.

September 1, the patient stated that her nose symptoms persisted most of the night. Her asthma, however, did not disturb her, although she was still wheezing when seen in the morning. At 4:30 p. m. she reported that her day was much more comfortable. She was comfortable most of the morning and the greater part of the afternoon.

September 2, the patient reported that she slept throughout the night. She had no nasal symptoms but there was some cough and expectoration. Her general appearance was much improved and she volunteered the information that she "felt fine."

September 3, rather against advice, she decided to leave the hospital. She was in excellent condition.

September 7, the patient returned, stating that, while the nasal symptoms were rather disturbing, she had been free from asthma since discharge from the air-conditioned room.

PROTOCOL 6.—S. F., a woman, came to the dispensary in an acute attack of pollen asthma with disturbing symptoms in the upper respiratory tract. She was admitted to the air-conditioned room at 4:30 p. m., August 29. At 5 o'clock, striking relief was noted by the patient.

August 30, the patient reported that her night had been rather poor. The nose and eye symptoms were very persistent and she had a definite attack of asthmatic breathing on awakening in the morning. At 3 p. m. her nose and eye symptoms had entirely subsided. She felt very much improved, although there was still "tightness" in her chest.

August 31, the patient reported that she had had a splendid night. No symptoms referable to the eyes, nose or lungs had occurred. At 11:30 a. m. she left the air-conditioned room and returned at 3:30 p. m. During the entire period of absence her nose and eye symptoms were very severe. When she returned, these symptoms cleared up within ten minutes.

September 1, the patient had a severe attack of asthma at 4 a. m., requiring several ephedrine capsules to bring about relief. When examined at 9:30 a. m. she was suffering considerably and there was a great deal of expectoration. During the morning her symptoms subsided and she fell asleep, resting comfortably until 4:30 p. m. free from all symptoms on awakening.

September 2, the patient stated that she had had a splendid night free from all symptoms. The patient insisted on going home for the day. She was discharged from the air-conditioned room at 10:30 a. m.

September 3, the patient was readmitted to the hospital after having spent a miserable night marked by recurring attacks of asthma. Ephedrine failed to relieve her.

September 4, she stated that her night in the hospital had been free from symptoms excepting a moderate amount of cough. There were no nasal symptoms.

September 5, she was free from symptoms.

September 6, mild asthmatic breathing was noted at 4 a. m.

September 7, 8 and 9, the patient remained in the hospital, free from all symptoms excepting for short visits during the day to friends in the neighborhood of the hospital. September 8, she went to her home, remaining for several hours, during which time she had a very severe attack of hay fever. The hay fever symptoms cleared shortly after readmission to the air-conditioned room.

The patient then decided to return to her home for several days but was so miserable that on September 12 she returned to the air-conditioned room. Her first night in the hospital was quite uncomfortable. She decided, however, to stay in the room for ten days and was finally discharged, September 22, in excellent condition, free from all asthma and symptoms of hay fever.

September 26, she returned to the dispensary with a history of having had no asthma and only mild symptoms of hay fever.

Protocol 7.—E. P., a woman, had suffered with hay fever and pollen asthma for a number of years. She was admitted to the air-conditioned room, September 7, with considerable respiratory distress. Her hay fever began on August 25 and her asthma on September 1. Within several hours after her admission to the room the asthma was relieved, but the sneezing persisted for a number of hours. The patient, who was a nurse, returned to duty on the morning of the 8th.

September 9, she returned to the air-conditioned room in considerable distress.

September 10, she was again admitted to the room, having been on duty for twelve hours. The attack of asthma was so severe that epinephrine was necessary. It was then decided that she should remain in the air-conditioned room for several days without returning to duty.

September 11, she had had a very good night and slept for practically the entire twenty-four hour period.

September 12, for the first time in months, she was able to sleep flat on her back and in general there was striking improvement. Examination of her chest still showed numerous râles.

September 13, she had had an excellent night. She had been free from symptoms during the night, but some nasal and eye irritation occurred during the morning.

September 14, she was free from all symptoms.

She was discharged from the hospital, September 15, in excellent condition.

Protocol 8.—E. K., a woman, had had pollen asthma and hay fever for several years. Persistent symptoms began on August 15 and she had been miserable previous to admission to the air-conditioned room on September 7. She was admitted to the room at 4 p. m. and relief was noted at 5 o'clock.

The patient remained until September 19. Her general condition improved remarkably excepting that her chest showed persistent râles for a number of days. These râles were of a wheezing inspiratory and expiratory character. The patient also had a rather persistent cough of about four days. For the first two days of her confinement, she had miserable sneezing and rhinitis controlled with ephedrine. From September 11 until discharge her nights were very comfortable and the slight cough of which she complained was controlled with small doses of codeine.

On discharge from the air-conditioned room, she was comfortable for twenty-four hours. During the latter part of September she reported from time to time with considerable hay fever and cough but no further attacks of asthma.

Protocol 9 (control case).—A woman had been under treatment for a number of years with asthmatic bronchitis, the etiologic factor being bacterial infection. She was admitted to the air-conditioned room, September 8, remaining under observation until September 11. No relief was noted during her stay in the hospital. On each night she had an attack of asthma lasting from three quarters of an hour to two hours. She was discharged unimproved; in fact, during her sojourn

in the air-conditioned room she was much more uncomfortable than during the previous two months.

Protocol 10 (control case).—W. S., a man who had been under observation for seven years, suffered with severe attacks of asthma. He was admitted to the air-conditioned room on September 16 at 12 noon. No relief was observed at 4:30 p. m. During the night, three doses of epinephrine were required to give him relief. In spite of this his chest was full of râles and he complained of extreme tightness.

On the night of the 17th, he again required two injections of epinephrine. His day was quite uncomfortable and the night equally bad.

On the 18th and 19th, his nights were so severe that additional doses of epinephrine were given, but without producing relief.

On the morning of the 20th he was discharged from the room in miserable condition, much worse than on the day of admission.

THE EFFECT OF AIR FILTRATION IN HAY FEVER AND POLLEN ASTHMA

FURTHER STUDIES

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During the autumnal hay fever season of August and September 1932, further studies were carried on to determine the effects of filtered air on patients suffering from autumnal hay fever and hay asthma.¹

In this experiment the air for the eight bed ward was filtered by two special machines manufactured by the American Air Filter Company. In accordance with the suggestions made as a result of our experience last year, two filters were installed in each machine through which the air passed in series. Each of these filters had an effective filtration surface of 22 $\frac{1}{2}$ square feet. Four ply cellulose filters were used with the exception of a short time when Eastman cloth, a woven cotton material, was substituted. The Sirocco type blower was used for moving the air. When the filters were clean, each machine had an approximate capacity of 800 cubic feet per minute. The machines were installed outside the room to overcome the objections of some of the patients that the operating hum of the motor disturbed their sleep. A small filter unit, manufactured by the American Air Filter Company under the name of Airgard, was used to circulate and refilter the air in the ward.

In the four bed ward two filter machines, manufactured by the Independent Air Filter Company, were used. Each machine had a capacity of approximately 450 cubic feet per minute. A Sirocco type blower was used to move the air. Both the motor and the blower were mounted on resilient springs to eliminate noise. In this machine a single filter of high grade wool felt was used. It had an effective filter area of about 20 square feet.

The cooling unit that was used in the four bed ward was of sufficient capacity to reduce the temperature 10 degrees F. below that of the incoming air. The installation was lent to the university for this experiment by the Frigidaire Sales Corporation.

From the Departments of Medicine, Pathology and Physiological Chemistry, University of Illinois College of Medicine.

1. Rappaport, B. Z.; Nelson, Tell, and Welker, W. H.: Effect of Air Filtration in Hay Fever and Pollen Asthma, *J. A. M. A.* 98: 1861 (May 28) 1932.

The machines were started on August 11, four days before any patients were admitted. The rooms were thoroughly cleaned by scrubbing before the experiment was begun and were washed each day thereafter with damp cloths. Pollen counts were made daily from several locations: (a) an outdoor count on the porch on which the machines were placed, (b) in various locations in the wards and in the control rooms of the same size and location in the building, (c) in the outlet ducts of all the machines, (d) at the intake ducts of the larger machines where the pollen laden air struck the first filter, and (e) in the transom where most of the air escaped from the room. The method of counting was that used in the National Ragweed Survey,² 1.8 sq. cm. being used as the unit area counted as representing the pollen in a cubic yard of air. It will be observed that

TABLE 1.—Pollen Counts Per Cubic Yard of Air

Date	East Filter Room	West Filter Room	Cool Room Settling	West Filter Room	East Filter Room	Warm Room Settling	Out- door Settling	Con- trol Room Settling	Trans- om Intake	Warm Room
Aug.										
15	4	..	11	0	0	15	25	40	..	..
16	2	..	13	0	0	6	61	32	..	..
17	2	..	4	0	0	10	60	24	..	..
18	10	..	14	1	0	6	48	56	..	..
19	1	..	6	0	1	8	89	18	..	..
20	3	..	2	0	2	3	69	39	..	..
21	0	..	11	4	0	5	312	78	..	..
22-23	4	..	8	16	3	10	375	114	..	..
24	9	0	16	2	6	15	323	171	..	..
25	3	8	10	1	1	2	334	180	..	..
26	1	5	6	6	12	12	341	147	..	..
27	4	3	4	0	0	6	325	82	..	..
28	3	4	18	2	3	7	378	135	..	..
29	4	1	10	1	0	3	543	177	..	..
30	6	4	13	3	2	5	633	209	..	..
31	11	3	8	2	2	18	699	189	..	..
Sept.										
1	11	1	18	0	5	15	72	63	..	..
2	7	1	5	0	0	4	174	54	..	..
3	0	0	5	0	1	2	40	22	..	..
4	0	1	1	0	0	2	70	34	112	2
5	0	6	6	0	0	6	440	192	720	5
6	1	2	6	0	2	3	144	11	212	1
7	10	7	3	1	0	5	305	30	162	5
8	23	11	42	2	0	4	70	64	276	8
9	2	2	4	0	0	7	195	26	68	4
10	2	4	0	0	1	10	62	36	112	10
11	2	2	5	0	0	3	78	38	408	54
12	0	0	4	0	0	2	402	62	294	8
13-14	2	3	6	2	0	5	330	108	147	18
15	0	0	8	0	0	2	134	62	117	13
16	0	1	7	0	0	7	82	19	84	11
17	0	2	4	0	0	2	57	30	228	5
18	0	0	2	0	0	5	135	16	192	6
19	0	0	3	0	0	2	151	31	71	15
20	1	0	3	0	0	11	26	16	15	5
21	0	0	1	0	0	3	11	5	39	..
22	0	0	2	0	0	3	13	6	..	..
Total	120	72	293	44	41	134	7,414	2,636		

two types of counts were made, one a settling count and the other a count in moving air currents of different velocities (table 1). Although we used the same method of counting the slides whether in moving or in settling air, the counts are not comparable, since those made in the moving air currents do not represent the amount of pollen in a cubic yard of air. From our observations we do not believe that a comparison between counts taken in the outlet ducts (moving air) and outdoor counts (settling counts) furnishes an accurate index of the efficiency of the filters. Such comparisons lead to inaccurate conclusions regarding the efficiency of the filters under observation. Many variable factors are operative in moving air, as, for example, (a) the speed of the current of air, (b) the "dead spot" of the current, (c) the distance of the exposed slide from the filter, (d) the proportionate

size of the slide to the size of the filtering surface, and (e) the proportionate size of the exposed slide to the size of the outlet ducts. Our counts on the slides placed at the outlet ducts (moving counts) were much lower than the counts taken in other parts of the room (settling counts). It was observed that most of the pollen grains on the slides from the outlet ducts were along the edges. This may be due to a disturbance of the air current by the interposition of the slide.

The highest count observed in the large ward was 18 grains per cubic yard of air for twenty-four hours. On only six days of the total of thirty-eight was the count above 10 grains. In the smaller ward where felt filters were used there were nine days when the count was above 10 grains. One of these was a count of 42 grains on September 8, when due care was not exercised in changing the filters.

Filters should be renewed sufficiently often to insure a constant flow of air. From table 2 it is noted that the filtering efficiency was greatly reduced when the filter pores become clogged. Another factor that should be considered is the "sifting" of pollen through a filter by the vibration of the motor and fan. This mechanical vibration should be eliminated as completely as possible.

As we observed in our work last year, there was no tendency for the pollen concentration in the room to follow the pollen curve outdoors. It is interesting to note that during the first six days of the experiment, when the outside settling count varied from 25 to 89 pollen grains per cubic yard of air with a total count of 352 grains, the settling count in the large ward totaled 48 grains (table 1). From August 26 to August 31, the first high peak of the season, while the outside counts varied from 325 to 699 grains per cubic yard, with a total of 2,919 grains, the counts in the room totaled only 51 grains. In the first period the filtering efficiency, compared with the outside counts, was but 86.37 per cent, while in the second period an efficiency of 98.26 per cent was attained. During the same two periods the total counts in our control room were 209 and 1,029 grains, respectively. In comparison to the control room, the efficiency of the machines was found to be 77.04 and 95.05 per cent, respectively. It is difficult to explain why there was more pollen in the rooms during the early part of the season, unless four days of constant filtration may not be sufficient to rid even hospital rooms with no carpets or draperies of all the pollen that they contained. It is more difficult to explain this when one considers that the moving air current counts for the two periods totaled 4 and 33 pollen grains, respectively. Our patients, however, were relieved as promptly of their hay fever symptoms during the first period as during the second. We feel that we cannot come to any accurate conclusion as to the amount of pollen necessary to precipitate attacks of hay fever. This is undoubtedly a highly variable factor and depends on the degree of sensitivity. From our experience we can state that when there are no other factors operating, such as weather changes, settling counts up to 18 grains per cubic yard are not a hindrance to hay fever patients in obtaining prompt relief from their symptoms.

During the entire period of observation, the filtering efficiency of our filters was as follows: In comparison to the amount of pollen outside, the filters in the large ward had an efficiency of 98.20 per cent. Compared to the counts of the control room, the efficiency was 94.92 per cent. In the smaller cooled ward the efficiency, based on outdoor pollen counts and on the control room, was 95.98 and 88.70 per cent, respectively.

2. Durham, O. C.: Incidence of Ragweed Pollen in United States During 1929, J. A. M. A. 94: 1907 (June 14) 1930.

We believe that no pollen filter on the market at present can claim 100 per cent efficiency for pollen. Such descriptions have not only been used in lay advertisements of this type of apparatus but have even crept into the medical literature. Beck,³ in describing the commercial filter used in obtaining her data says, "This filter, after being subjected to rigid laboratory

TABLE 2.—Anemometer Readings and Air Changes in Uncooled Ward

Date	Total CFM*	Air Change Minutes	Comment
Aug. 12.....	1,600	4.7	Machines started with paper filters
Aug. 24.....	800	9.4	Before change of filters
Aug. 24.....	1,100	6.8	Eastman cloth put in top stages
Aug. 30.....	800	9.4	Before change
Sept. 4.....	1,600	4.7	Paper filters put in top stages
Sept. 4.....	1,450	5.2	Before change
Sept. 4.....	1,600	4.7	New paper filters put in top stages
Sept. 7.....	1,450	5.2	Before change
Sept. 8.....	1,400	5.7	Before change
Sept. 8.....	1,600	4.7	New paper filters put in top stages
Sept. 13.....	1,306	5.7	Before change
Sept. 13.....	1,500	5.0	New paper filters put in top stages
Sept. 17.....	1,350	5.5	Before change
Sept. 17.....	1,500	5.0	New paper filters put in top stages
Sept. 23.....	.....	...	Filter shut down

* In this column CFM indicates cubic feet per minute.

tests, was found to render the air of the room in which it was installed one hundred per cent free of pollen." The type and duration of the laboratory tests are not mentioned. It is not stated whether pollen was merely suspended at the intake duct and slides were exposed at the outlet duct for a period of minutes or hours or whether the machine was tried out during a pollen season. The former method of determining the efficiency of a filter, which is the one commonly used, does not indicate the true efficiency of the filter. That does not take into account the reduction of the effective area of the filter surface by the clogging effect of dust particles with the resultant increase of the velocity of the air flow through the remaining filter area. This increase in the rate of air flow undoubtedly results in pollen being carried through the filters. In addition, the type of test that does not take into account the effect of the sifting of pollen through the filter as a result of the vibration produced when the machine has been run

filters were installed in offices in the Chicago business district, where the pollen concentration is decidedly lower than in the residential districts. In spite of this, as is shown in table 3, none of the filters could be called 100 per cent efficient. Filter unit 1 is the one described by Beck³ in her study. As shown in table 3, an average of 6 grains of pollen per cubic yard for twenty-four hours was admitted through this filter during the six days that pollen counts were made.

The average number of pollen grains per cubic yard for twenty-four hours admitted by filter 2 was 7.33, and by filter 3, 3.66. The filtering efficiency of each of these units for the six day period was 97.63, 97.33 and 98.73 per cent, respectively. This, however, was determined by a comparison of the pollen count at the outlet ducts (moving count) with the count outdoors (settling count), as no settling pollen count was made in the rooms equipped with these filters. Based on such a comparison, the filtering efficiency of the four experimental filters used in our wards was 98.25, 98.88, 99.41 and 99.45, respectively. As we have previously mentioned, however, this is not the method to be used in evaluating the efficiency of a filter.

The air in the larger ward was completely changed every five minutes at the beginning of the experiment. When the time required for such a change increased to

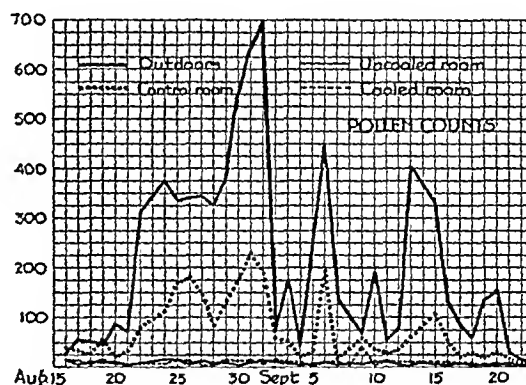


Chart 1.—Pollen counts outdoors, in the control ward and in the filtered air wards.

seven minutes or longer, discomfort was complained of. It was found advisable to keep as constant an air delivery as possible. We believe that an air change between five and six minutes in our large ward of 7,500 cubic feet was sufficient for the comfort of our patients. The feeling of oppression, which is present when large volumes of air are pumped into a closed room, was entirely relieved by opening a transom leading to an adjoining hallway.

During the entire period of the experiment, it was our observation that there was a higher relative humidity in the cooler room than in the larger ward and that, although the patients were more comfortable as far as temperature was concerned, their symptoms were not as promptly relieved in the cool room as in the uncooled ward (chart 1). The comfort of the patient is not entirely due to adequate ventilation and to comparatively pollen free air but is dependent on such physical factors as the change in temperature and relative humidity. With a temperature difference of 10 degrees between the outdoors and the cooled room, patients complained of a feeling of chilliness, even with indoor temperatures of 75 F.

It is our opinion that when such factors as air volume and pollen concentration are controlled, rapid atmospheric changes of wide amplitude can produce charac-

TABLE 3.—Pollen Counts at Outlet Ducts (Grains per Cubic Yard for Twenty-Four Hours)

Date	Aug. 27	Aug. 28	Aug. 29	Aug. 30	Aug. 31	Sept. 1	Sept. 2	Filtering Efficiency,* per Cent
Filter unit 1.....	13	4	11	No slide	7	5	14	97.63
Filter unit 2.....	No slide	4	14	5	16	4	1	97.33
Filter unit 3.....	3	6	2	No slide	5	2	4	98.73
Outdoor pollen count	214	493	238	131	502	77	153	

* The filtering efficiency of these filters is based on the ratio of pollen counts at the outlet ducts (moving count) to outdoor pollen counts (settling count). As previously noted in this study, such comparisons are misleading. However, no settling counts in the filtered air rooms were made for comparison with the outdoor counts.

for a sufficient length of time is not a true test of the efficiency of the filter. The only type of test to be recommended for determining the filtering efficiency of a filter involves its actual use for a period of at least one week during the season.

We examined slides exposed 1 inch away from the outlet ducts of the latest types of three different filtering units manufactured by different companies. The

teristic symptoms, especially in asthmatic patients. This will be discussed later.

Seventy-six patients were selected from a large group of applicants. Patients with average intelligence and with typical symptoms of hay fever and with skin tests positive to ragweed pollen were chosen. They were classified into two groups: (1) cases of hay fever and (2) cases of pollen asthma.

Hay fever patients were observed from three to seven days, and those with asthma from four to twenty-one days. All patients were interviewed and examined morning and evening. All remained in the filtered air until relieved of their symptoms both subjectively and objectively. The uncomplicated hay fever patients were permitted to go out for twelve hours the first day. This period was decreased one hour each day, until on the fourth day they remained in the ward for fifteen hours. A room was provided for the removal of outer garments, and only such clothing as night attire and bath robes were permitted in the wards. Every precaution was taken to prevent bringing pollen into the ward on the clothing. We feel that this may in many instances defeat the efficiency of filtration.

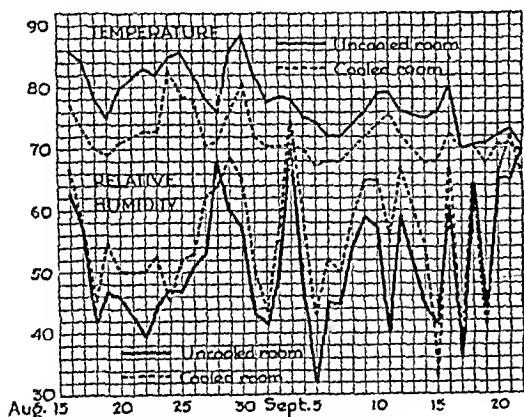


Chart 2.—Temperature and relative humidity in the uncooled and in the cooled wards.

This factor is difficult to control whether in an experimental ward or in the home. It is impossible even by changing clothing to prevent this completely. We even found that some pollen may be carried on the hair of persons entering the rooms. The difficulty is even greater in homes where rugs, upholstered furniture and hangings that cannot be removed may contain large quantities of pollen, which will be constantly stirred up by the air current. The installation of four portable filters to refilter the air in the large ward was probably of great help.

Precautions should be taken when dealing with female patients to remove all face powders and cosmetics before they enter the room. We observed that our slides showed very little pollen, dust and lint early in the experiment. Some of the patients in an adjoining ward required lycopodium as a medicament. Although none of our patients came in contact with this drug, we nevertheless found granules of lycopodium on our settling counts both in the control and in the experimental rooms. These probably were carried into the room on clothing of patients and attendants. None were found on slides exposed outdoors or in the outlet ducts. This observation served as a clue of the relative amounts of pollen grains brought into the room through other means than the filter.

Studies were made to determine the time required and the degree of relief afforded by filtered air, both in the patients with uncomplicated hay fever and in the patients with pollen asthma. In addition, studies were made to determine the time required for symptoms to reappear on exposure to outside air, after confinement in filtered air for varying periods of time.

OBSERVATIONS

Forty-one patients with hay fever of the autumnal type and with positive skin reactions to the Ambrosia group of pollens were observed for an aggregate of

TABLE 4.—Degree of Maximum Relief

	Number of Patients	Percentage of Total Patients
Complete.....	30	16.3%
Great.....	66	35.9%
Slight.....	62	33.7%
No symptoms on entering.....	22	11.9%
No relief.....	4	2.2%

184 nights. Some patients spent only one night in the ward and were not included in our studies. Our observations were intended to answer several questions:

1. What is the length of time required to obtain the maximum degree of relief? The average time required for maximum relief from hay fever symptoms on the various days of the experiment is shown in chart 2. It will be noted that, on days when the pollen content of the air was high, the time required for relief was greater than on days when the pollen concentration was lower. The average time required for maximum relief of symptoms regardless of their severity on entering the ward was 2.3 hours. The degree of maximum relief expressed in percentage of patient nights was as given in table 4.

From these figures it is noted that our patients were afforded more than 50 per cent of complete or great relief in the ward. The four instances of no relief are interesting and difficult to explain. The first occurred on August 18, with an outdoor pollen count of 48 pollen grains per cubic yard. It was preceded and followed by two nights with complete relief. The second instance came on August 22, with a pollen count of 375. This was the last night in the ward for this

TABLE 5.—Degree of Symptoms

	Number of Patients	Percentage of Total Patients
No symptoms.....	14	9.0%
Mild.....	31	20.0%
Moderate.....	26	16.7%
Severe.....	84	54.3%

patient. All others that night had either complete or great relief. This patient had had great relief the preceding seven nights, but the symptoms on the last day, although coming on three hours after the patient left the ward, were very severe. The third unrelieved patient had a similar experience on the last night in the ward after a week of great or complete relief. The symptoms during the day had been very severe and came on two hours after the patient left the ward. The pollen count on this day was 543. The fourth patient came in with severe symptoms and had no relief on the first night of her stay, after a day in which the pollen count was 144. Although no relief was obtained the first night, symptoms gradually subsided the next day, and even though she was permitted to go outdoors for

the usual periods she did not have any symptoms during the next two days.

We believe that the time required in filtered air for the maximum degree of relief depends on two factors: first, the severity of the symptoms as determined by the degree of sensitivity, and, second, the dosage of pollen that the sufferer has come in contact with during the day. The degree of relief depends on the same factors.

2. How soon do symptoms reappear on exposure to pollen laden air? The average time required to bring on symptoms on exposure to pollen laden air was 2.06 hours. Table 5 shows the degree of symptoms expressed in patient days.

It is interesting to note from chart 2 that the time necessary for the onset of symptoms is inversely proportional to the pollen concentrations. The higher the pollen concentration, the more severe are the symptoms. No difference in either the rapidity of the onset of symptoms or in their severity was noted following various periods of constant residence in filtered air. Patients were kept in the room for varying periods of time, from ten to sixty-eight hours, before being exposed to unfiltered air. It is interesting to note the time required and severity of symptoms in six patients who had been continuously confined in the room thirty-six hours or more, and who had been symptom free when they left (table 6).

TABLE 6.—Time Required and Severity of Symptoms in Six Patients

Patient	Hours in Ward	Outdoor Pollen Count*	Time of Onset	Degree of Symptoms
1	36	61	1 hour	Slight
2	40	108	None	None
3	43	328	None	None
4	51	70	2 hours	Severe
5	67	195	3 hours	Slight
6	68	72	1/4 hour	Severe

* Outdoor pollen count on day patient was permitted to go out.

We believe that the rapidity of the onset of symptoms on exposure to pollen is dependent on the pollen concentration regardless of the length of time for which a patient has been confined to the filtered air rooms. This is in keeping with our observations of last year. A longer period of exposure to pollen is required to bring on symptoms during the latter part of the pollinating season. This, we believe, is not due to a tolerance gained to pollen but rather to a lower pollen count (chart 2).

It is a fallacy to believe that residence in filtered air renders a patient less susceptible to pollen to such a degree that he will not have symptoms when subsequently exposed to pollen.

3. What is the effect of cooled filtered air on the time required for relief and the degree of relief? Of the entire group studied in both rooms, 72.8 per cent were relieved of their symptoms in three hours or less. In the cooled ward, the proportion was only 61.1 per cent, while in the uncooled ward it was 76.9 per cent. Several of the patients were shifted from one ward to another during their stay in the hospital. All stated that the degree of relief in the uncooled ward was greater and the time necessary for this relief shorter than in the cooled ward.

There were 104 instances of patients awakening during the night because of symptoms, such as sneezing. The majority of these attacks occurred in the early hours of the night. In practically all instances they were mild.

In general, we can state that relief of more than 50 per cent of symptoms of hay fever can be obtained by filtered air in three hours or less. The time of onset of symptoms after exposure to pollen is apparently not related to the length of residence in filtered air but depends on the pollen concentration and on the degree of sensitivity of the patient. The addition of cooling to the filtration does not seem to hasten the relief or increase the degree of relief obtained.

Of the thirty-five untreated pollen-asthma patients selected for observation, eighteen were studied for four days or less, and seventeen for periods of from six to twenty days. Of the eighteen who were studied for four days or less, eleven left the ward within forty-eight hours after admission, dissatisfied with the degree of relief that they had obtained. Since they did not remain long enough for a satisfactory study, they are not included in our report or in the results given in table 7.

Our study was intended to answer several specific questions:

1. Will the asthma patient be relieved by confinement in filtered air? If a patient with uncomplicated pollen

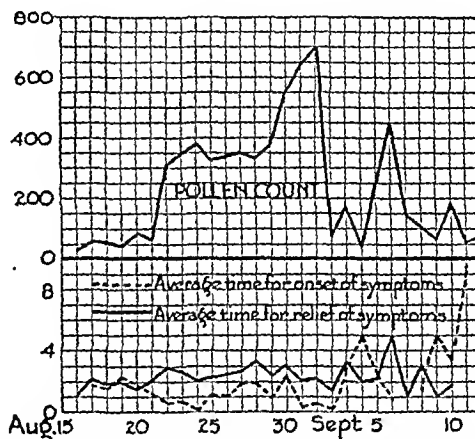


Chart 3.—Relationship of outdoor pollen count to the average time required for relief of hay fever symptoms in filtered air and for the onset of symptoms on exposure to pollen.

asthma is strictly confined for a long enough time to a room equipped with an adequate filter, his subjective asthma will clear up. The objective signs of the asthmatic condition, that is, wheezing and prolonged expiration present on examination of the lungs, are not so easily relieved. All the patients who remained more than forty-eight hours in the ward were relieved. The subjective symptoms cleared up completely in a few of the patients and became much milder in the others. The objective signs of asthma had disappeared in only five of the thirty-five patients when they left.

2. How long should a patient be strictly confined to the filtered air before he is permitted to go outdoors? From studies based on seventeen patients who were observed for periods of six days or more, no definite statement can be made concerning the length of the primary period that a patient should be strictly confined to the ward. The length of this period is determined solely by the severity of the attack. When patients who had had no subjective asthma on the previous night were permitted to leave the ward for a period of from six to eight hours, they would sometimes have an attack of asthma shortly after going out or more frequently that night after returning to the ward. While

this attack was usually milder than the condition present on admission, it was sometimes as severe as any attack of that season and would often require strict confinement to the ward for as long as several days before it cleared up.

It is very likely that in general only persons with severe asthma volunteered for our work and that many sufferers from mild asthma require a preliminary confinement period of only twenty-four hours or possibly less. There are, however, more severe pollen asthmatic states than those we studied, as those described by Kahn,⁴ who required constant confinement of much longer periods. In his report of a group of asthma patients in Texas, he mentions twelve days of constant residence needed by one patient, from one to two months by others, and as long as five months by one individual. With such variations, one must decide cautiously when one is to permit the patient with asthma to go outdoors. One must base the decision on the absence of subjective asthma the previous night and on the presence of only slight or, better still, no wheezing over the lungs.

Our observations on this question do not agree with those of Beck,³ who states that patients with pollen asthma improve as rapidly when confined to filtered air

hours. The tolerance period is markedly variable in the same patient on different days. On one day he may be able to be out for eight to ten hours, while on subsequent days, usually because of the increased pollen concentration outdoors, even less than an hour of exposure may be sufficient to cause an attack. Here again we differ with Beck,³ who reports that patients with pollen asthma using a commercial air filter were able to be out for periods of from fourteen to fifteen and one-half hours daily. Those who came under observation at the height of the season were able to tolerate shorter periods of exposure to pollen than those who entered early in August or mid-September.

The twenty-four patients whom we studied were permitted to leave the ward when they had been free from asthma or had had only a slight attack the previous night. They were permitted to remain out of the room for periods up to ten or twelve hours but were instructed to return with the onset of severe hay fever or any symptoms of asthma. In table 7 we have divided the twenty-four patients observed for from three to twenty days into five groups, based on the duration of the primary period of confinement that was found necessary before the condition cleared up sufficiently to permit the individual to go out of the ward.

TABLE 7.—Observations in Twenty-Four Cases of Pollen Asthma

Period of Primary Confinement	Number of Patients	Average Number of Days of Observation	Average Number of Hours per Day Spent Out of Room	Total Number of Nights of Severe Asthma	Per Cent of Total Number of Nights of Observation	Total Number of Nights of Moderate Asthma	Per Cent of Total Number of Nights of Observation	Total Number of Nights of Slight Asthma	Per Cent of Total Number of Nights of Observation	Total Number of Nights of No Asthma	Per Cent of Total Number of Nights of Observation
1 day.....	6	7	4.9	9	21	5	11.9	12	25.6	16	33
2 days.....	5	8	4.5	10	25	3	7.5	12	30	15	37.5
3 days.....	5	11	2.4	13	28.6	10	18.2	15	27.3	17	30.9
4 days.....	4	7	1.7	6	21.4	6	21.4	6	21.4	10	35.7
5 days.....	1	5	0	5	100	0	....	0	....	0	0
6 days.....	1	20	1.0	7	35	2	10	7	35	4	20
7 days.....	2	9	1.0	4	22.5	4	22.2	3	16.6	7	33.8

as those having uncomplicated hay fever. The hay fever patients observed by us improved more rapidly than the asthma patients. Beck reports that eight of sixteen asthma patients obtained relief in twelve hours. None of our patients obtained relief in less than forty-eight hours.

We consider it a fallacy to form an opinion of the degree of improvement of the asthmatic condition in less than twenty-four hours. It is a well established clinical observation that patients with asthma have more severe symptoms at night and frequently only at night. Such a patient will feel better with or without a filter in twelve hours, when morning comes. This was true in all except the most severe cases in the group that we observed. Unfortunately, Beck's conclusions were based on observations made only from the records of the patients with the machines used in the homes of these individuals. No mention is made in her report of the frequency with which each patient was examined by a physician for subjective and objective evidences of improvement.

3. For what length of time daily may such a patient be permitted to leave the filtered air? The length of time that a patient may be permitted to be out also cannot be determined by a set of statistics. For some individuals the exposure period necessary to precipitate an attack may be as brief as one-half hour, while others may tolerate exposure to pollen for as long as twelve

As will be noted, those having the mildest asthma, who required only twenty-four hours of primary confinement, could go out for an average period of 4.9 hours a day. In the more severely affected, as the length of primary residence required increased, the average number of hours each day that the patients could remain out of the ward decreased. Those with the most prolonged and usually the most severe attacks could tolerate only an average of one hour a day exposure to pollen outdoors.

Those with severe asthma required a longer period of primary confinement and had more frequent night attacks in spite of confinement than those with mild asthma. In table 7 this is expressed in percentage of the total number of nights of observation.

The following history, which is typical of the patients with more severe asthma, illustrates the difficulty in determining the duration of the primary confinement period, and of the length of time that a patient may be permitted to go outdoors:

I. C., a woman, aged 47, admitted to the ward on September 2 and discharged, Sept. 22, 1932, had had autumnal asthma for thirty-three years, starting August 15. She had been kept awake from five to eight hours a night during the two weeks preceding her admission. On admission, the lungs showed marked evidence of asthma. She had only two hours of severe asthma the first night. She was confined to the ward for four days, during which her symptoms became milder but did not completely disappear. She awoke four or five times each night with mild attacks of asthma and hay fever.

4. Kahn, I. S., in discussion on Cohen, M. B.: J. Lab. & Clin. Med. 13:963 (July) 1925.

September 6, after four days of constant confinement, she was permitted to go into the hall outside the ward for one hour. At the end of this period she had an attack of asthma which subsided slowly after she returned to the ward. The next day (the fifth in the ward) she was out for three and one-half hours. Symptoms of hay fever but no asthma developed. After she had been out for two hours the following day, slight hay fever symptoms began and continued all night, together with a moderately severe attack of asthma. In the morning, more wheezing was present over the lungs than on the previous day. She was out for one hour on September 10 with no asthma resulting. September 11 (the ninth day in the ward), she was out for eight and one-half hours. One-half hour after she left the ward, hay fever symptoms began. Six hours later, symptoms of asthma began. That night she had severe asthma for four hours, the worst since admission to the hospital. The following night, during a heavy rain, she and the five other patients in the ward had severe asthma lasting all night. This lasted for thirty-six hours with hardly any relief obtainable from epinephrine. The condition slowly improved and, after three days of strict confinement to the ward, no subjective asthma was present. The lung condition subsided even more gradually than the symptoms. She was out on September 16 for one-half hour with no ill effect but was confined strictly to the ward for the next two days because of the mild wheezing still present over the lungs. She had no subjective asthma during this period. In spite of this relative protection from pollen, a severe attack of asthma occurred the second night of this period. Two days later, September 20, she was able to be out for eight hours with no asthma. The following day, after being out for seven hours, she had a mild attack of asthma. She was discharged, September 22, with mild wheezing still present over the lungs but with no subjective asthma.

4. Will confinement in filtered air for a reasonable length of time each day prevent the onset of asthma in individuals who have developed pollen asthma in previous seasons? This is possibly one of the most important questions to be answered. Four patients were admitted before they had had any symptoms of asthma this season, two on August 15 and two on August 22. The first was permitted to be out for an average daily period of nine and five-sevenths hours. He developed asthma the fourth night of his confinement. The attack recurred on the following two nights.

The second, who was admitted on August 15, was out of the ward for an average daily period of nine and a half hours. He had his first attacks of asthma on the seventh and eighth nights of his observation.

The third patient was admitted on August 22. She also was permitted to go out for an average period of nine and a half hours daily. Her first asthma attack of this season occurred the fourth day of observation, six hours after she left the ward. It recurred the following day immediately after she left the ward and continued until the next morning. When it subsided, she again went out and had the same experience immediately after leaving. Another attack occurred the next night.

The fourth patient, admitted on the same day, was permitted to go out daily for an average period of ten

and a half hours. An attack of asthma occurred the seventh night of her stay in the hospital.

To this group of four patients may be added a fifth, who previously had never had asthma. Wheezing and dyspnea developed the first night of her stay in the ward.

The occurrence of asthma in this group of patients who were permitted to go outdoors for daily periods of nine and a half to ten and a half hours indicates that the use of filters that are on the market today will not generally prevent the occurrence of asthma in hay fever patients. It is possible that if the individual is confined for a much longer period each day than thirteen and a half hours, or if the asthma is very mild, the early use of a filter may prevent its occurrence. It is significant that these were not a group of unrelieved patients. They were relieved as much of hay fever symptoms as the nonasthmatic hay fever patients previously discussed.

5. What is the effect of atmospheric changes on pollen asthma? In a preliminary observation from August 13 to August 15, four patients with hay fever

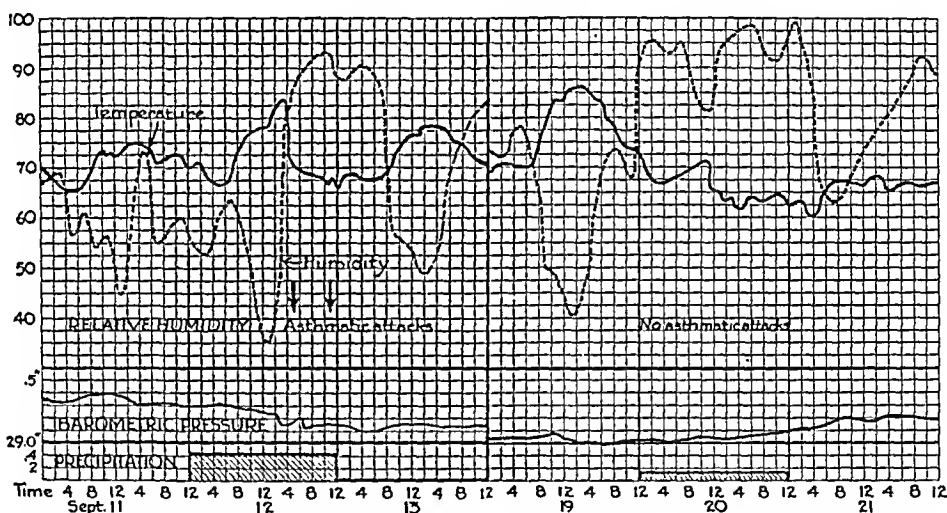


Chart 4.—The influence of weather changes on the occurrence of attacks of asthma in patients confined to filtered air.

and hay asthma failed to obtain relief in the room equipped with the refrigerating unit when the filter was not in use. Later observations with the use of filtration and refrigeration showed that, while many patients felt more comfortable in the cooled room on hot days, their dyspnea was not relieved either to a greater extent or more quickly than patients in the uncooled ward. Some patients who were transferred from the uncooled room complained of even more severe attacks of asthma in the cooled ward. We believe that the increased relative humidity of the cooled air aggravated the symptoms of asthma in some patients.

An unusual opportunity for the study of the effect of weather changes on patients suffering from pollen asthma was offered on the 12th and 20th of September. September 12, seven patients were in the two wards. Six of these had been under observation since September 3, and one had entered the day before. Four of the seven had been permitted to go out for from nine to twelve hours that day, while the other three had remained in the ward during the preceding thirty-six hours. All had relatively little or no asthma. At 5 p. m., September 12, when the first rain of that day

started, all seven began to have asthma. The attacks became milder by 9 p. m., but recurred at 11 p. m. with the second heavy downpour. The attacks lasted all night and persisted in spite of the use of epinephrine for from one to three days.

Five of the same group remained under observation until September 22. Another rain occurred, September 20. It failed to produce the same effect as had occurred on September 12. It is noteworthy that on September 12 the weather conditions were very unstable. There occurred a sudden drop in temperature, a very marked rise in humidity, and a sharp drop in barometric pressure, followed by a rise and another fall. September 20, the rise in humidity was also great but not as rapid or as marked. There was a fall in temperature and a very gradual rise in barometric pressure. These changes are shown in chart 4.

These observations indicate that other factors besides pollen concentration influence attacks of asthma during the season. This is especially emphasized by the history of the three patients who had been confined to the ward for the preceding thirty-six hours with no symptoms. With the occurrence of a sudden drop of barometric pressure, a fall in the temperature and an increase in the relative humidity there developed a simultaneous attack of asthma in all these patients. Since the pollen concentration and the rate of air change remained practically the same during all these periods, the atmospheric changes in all probability played a rôle in the onset of these symptoms. Suggestion as a factor in influencing this almost simultaneous occurrence of asthma may be ruled out, since on previous occasions one or two patients had attacks without influencing any of the others of this group.

It is interesting that many patients in the private practices of allergists of this city who had no previous attacks during this season suffered from more or less severe attacks on the night of September 12.

There are two possible explanations of these observations: First, that the changes in atmospheric conditions may in themselves precipitate attacks of asthma in sensitive individuals. The effect may be similar to that of other physical agents and is apparently dependent on violent atmospheric disturbances. Second, that the degree of sensitivity is altered by atmospheric changes, so that pollen sensitive individuals react to very much lower concentrations of pollen.

CONCLUSIONS

1. Experimental and commercial filters as now manufactured are not 100 per cent efficient for removal of pollen.

2. Air filtration that removes all but traces of pollen will relieve symptoms of hay fever.

3. Symptoms reappear on exposure to pollen laden air regardless of length of confinement to filtered air. The time for reappearance of symptoms is inversely proportional to the pollen concentration outdoors.

4. Filtered air, cooled from 8 to 10 degrees F. below outside temperatures without dehumidification, does not give as prompt or as great relief from symptoms of hay fever as uncooled filtered air.

5. If patients with pollen asthma are confined in filtered air for a sufficient length of time, their subjective symptoms of asthma will be relieved. The objective evidences of asthma disappear less readily.

6. The length of the primary confinement period in filtered air is determined by the severity of the asthma.

7. Patients with asthma require a longer period of initial confinement in filtered air than those with hay fever.

8. The tolerance period on exposure to pollen varies even in the same individual from day to day because of the variation in the pollen concentration outdoors.

9. Confinement in filtered air before the onset of asthma will not prevent its occurrence.

10. Cooling of filtered air may aggravate asthma because of an increase in relative humidity.

11. In addition to pollen concentration, weather changes are important influences in precipitating attacks of asthma in pollen sensitive patients.

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MINIMIZING EARLY POSTOPERATIVE PNEUMONIA

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The literature of recent years is replete with articles dealing with the early pneumonic complications following anesthesia and operation. The frequency and gravity of these conditions have everywhere been recognized. But as their etiology was obscure, the suggested means for prophylaxis were many, but unavailing.

A great impetus, however, was given to research in this field with the postulation of the theory that these complications are caused primarily by an altered physiology, depressed respiration. This decreased pulmonary ventilation prevents the tracheobronchial secretions from being removed by nature's processes, and, remaining in situ, these secretions block the air passages, thus often imprisoning pathogenic bacteria. The air in the areas of the lungs supplied by the bronchioles or in the bronchi closed by these plugs of mucus is soon absorbed. Thus atelectasis is caused, its extent depending on the size and number of the air passages so occluded. The imprisoned bacteria, being undisturbed in an unaerated field, multiply rapidly. The ensuing pathologic development, if any, is usually pneumonia, as the pneumococcus is the predominant pathogenic organism present in this field.

What may be considered a step in the development of this theory was the observation of Scott¹ on the postoperative massive collapse of the lung; and again when he and Cutler² reported on that subject and the effect of hyperventilation with carbon dioxide after anesthesia and operation, in accordance with the method of Henderson, Haggard and Coburn³ as a prophylaxis.

Coryllos and Birnbaum⁴ then postulated that lobar pneumonia was a pneumococcal lobar atelectasis. Henderson and Haggard⁵ recommended hyperventilation of the lungs (with carbon dioxide) as a prophylactic measure for pneumonia.

From the Anesthesia Department of the Woman's Hospital.

1. Scott, W. J. M.: Postoperative Massive Collapse of the Lung, *Arch. Surg.* 10: 73 (pt. 1, Jan.) 1925.

2. Scott, W. J. M., and Cutler, E. C.: Postoperative Massive Atelectasis: II. The Effect of Hyperventilation with Carbon Dioxide, *J. A. M. A.* 90: 1759 (June 2) 1928.

3. Henderson, Vandell; Haggard, H. W., and Coburn, R. C.: The Therapeutic Use of Carbon Dioxide After Anesthesia and Operation, *J. A. M. A.* 74: 783 (March 20) 1920.

4. Coryllos, P. N., and Birnbaum, G. L.: Lobar Pneumonia Considered as a Pneumococcal Lobar Atelectasis of the Lung: Bronchoscopic Investigation, *Arch. Surg.* 18: 190 (Jan.) 1929; *Bull. New York Acad. Med.* 4: 384 (March) 1928.

5. Henderson, Vandell, and Haggard, H. W.: Hyperventilation of the Lungs as a Prophylactic Measure for Pneumonia, *J. A. M. A.* 92: 434 (Feb. 9) 1929.

As this theory of the primary cause of early postoperative pneumonic complications is physiologic—depressed respiration—and the prophylaxis is the inhalation of carbon dioxide, it has attracted the attention of surgical clinics everywhere, for the anesthetics in general use depress respiration when given to the full effect. In addition, many operations per se also cause hypoventilation of the lungs both during and immediately following operation, laparotomies being the most important class in producing this respiratory restriction. The early postoperative narcotic medication often prolongs this hypoventilation.

The considerable incidence of pneumonia and atelectasis occurring so early after operation alone indicates that there may be something directly connected with the anesthesia, operation or immediate postoperative period that favors the development of these serious complications. Pulmonary hypoventilation is a conspicuous condition of this special time.

The usual pneumonia that follows operation generally develops on the second or third postoperative day. There are a sudden, but not a great, rise in temperature, an accelerated pulse and respiration, cough with more or less pain, purulent expectoration and leukocytosis. The percussion note is dulled. The x-ray picture shows a light V shaped shadow. The lower lobes are the most frequently affected. Bronchial breathing may not appear until after another twenty-four hours. The condition is generally classified as bronchopneumonia or pneumonitis.

Closely associated with this type of postoperative pulmonary complication is massive atelectasis or collapse of a lung or of a lobe. This occurs early after operation and often eventuates in pneumonia. So intimately are these conditions associated that the differential diagnosis in the developing period of pneumonia (if such a development occurs) is frequently obscured. Coryllos⁶ asserted that there is "the greatest difficulty and often the impossibility of a differential diagnosis between pneumonia and lobar atelectasis, clinically as well as roentgenographically." King⁷ also emphasized the difficulty of differential diagnosis, and in his report of these complications he stated that he does not separate the early postoperative pneumonia from collapse of the lung.

If the area or areas of atelectasis are small and the bronchioles supplying these areas are "unplugged" before infection develops, they are unnoticed.

Another typical but rather infrequent pneumonia of this early postoperative period is the aspiration type. It usually occurs on the first or second day after operation.

It is emphasized that sepsis increases the incidence of pneumonic complications throughout the entire postoperative period.

These early postoperative pulmonary complications vary greatly in their severity. Some produce only slight manifestations, while others are very toxic. In a study covering two years at the Presbyterian Hospital, New York, Whipple⁸ reported twenty-five deaths in ninety-seven cases of postoperative pneumonitis, or a mortality rate of 25.8 per cent. This classification covers the majority of the total pulmonary complications of the types here discussed, which occur in the early postoperative period.

As to incidence, the very number clamors for prophylaxis. King,⁷ in a study at the Massachusetts General Hospital, Boston, reported an incidence of 14 cases of early postoperative pulmonary complications after 148 gynecologic laparotomies, the patients being untreated with carbon dioxide, or an incidence of 9.6 per cent. The mortality rate was not stated.

At the Woman's Hospital, a total of 654 gynecologic laparotomies were performed during 1932, this being the only class of operation of any number at this hospital which King covered in his investigation. In the group of 654 consecutive gynecologic laparotomies at the Woman's Hospital, there were only two early pulmonary complications of the type discussed, or an incidence of 0.31 per cent, with no mortality.

Of the 654 laparotomies, 207 were of the "double" type of gynecologic operation, involving an operating time of from an hour and a half to two hours or more. Two complications occurred in this class of operation; one, light bronchopneumonia, and the other, collapse of the lung. The following unusual history of the last mentioned complication is from the record of the case:

Preoperative diagnosis, tracheobronchitis chronic.

During the past four years, patient has had four attacks in which a diagnosis of spontaneous pneumothorax has been made. During each attack patient would have sudden severe pain in right chest, followed by marked dyspnea, and on one occasion she lost consciousness for a period of an hour and a half.

Repeated roentgen examinations have shown no pathologic changes except the collapsed lung, which returns to the normal condition after several weeks. Repeated sputum examinations have also been negative.

Patient has a son, aged 14, who has also had a similar attack during his earlier childhood.

Only one other case of pneumonia occurred in this series during the entire stay in the hospital, and that developed on the eighteenth day after operation as a complication of a preexisting infection.

Carbon dioxide was administered to many of the patients, and it is thought that this form of prophylaxis is reflected in the record of low incidence of early postoperative pulmonary complications just quoted. Other means, also, were designedly used for the same end, and this prophylaxis is likewise reflected. This composite prophylaxis will be detailed, not that it involves anything in its component parts that is not known, but rather because it combines into a balanced practical whole various available means and methods that have been proved of value in meeting the problem of early postoperative pneumonia, in the light of the newer concept of its etiology. The effectiveness of this prophylaxis may be judged better by comparative results than by a theoretical consideration. The records of the hospital have been diligently searched, so there is little probability of any error of omission affecting the rate of incidence reported.

Since this report was originally submitted, the records for 1930 and 1931 have been studied. The totals for the years 1930 to 1932 inclusive are: gynecologic laparotomies, 1,837; early pulmonary complications, 6, or an incidence for the three-year period approximately the same as for the year 1932, given in more detail. These complications include all types of pneumonia or pneumonitis and collapse of lung that occurred within the first four days after operation. It is considered that this covers the time in which these complications that may be associated with the respiratory depression of

6. Coryllos, P. N.: Postoperative Apneumotosis (Atelectasis) and Postoperative Pneumonia, J. A. M. A. 93: 98 (July 14) 1929.

7. King, D. S.: Postoperative Pulmonary Complications, J. A. M. A. 100: 21 (Jan. 7) 1933.

8. Whipple, A. O.: A Study of Postoperative Pneumonitis, Surg., Gynec. & Obst. 26: 29 (Jan.) 1918.

anesthesia, operation and immediate postoperative period have their inception.⁷

With interest centered on respiratory depression (a term here used synonymously with subventilation and hypoventilation), the important question that arises is What causes the pulmonary hypoventilation, or that part of it which may be amenable to prophylaxis?

On the basis of treatment, these causes may be divided into three general classes: (1) narcotics and nonvolatile anesthetics, (2) volatile anesthetics and (3) shock and hemorrhage. These three classes will be considered in reverse order.

SHOCK AND HEMORRHAGE

In both shock and hemorrhage, pulmonary hypoventilation is a conspicuous symptom. In 1924, in reporting observations in this hospital on blood pressure in operative surgery, I⁹ stated:

Blood transfusion stands at the head of the list of the means used for both the prophylactic and the restorative treatment of surgical shock and hemorrhage. However, in many cases, when serious depression occurs during or soon after the operation, blood transfusion usually is not available soon enough, for time is an all-important factor in the restorative treatment. To tide over till the patient can be typed and a donor arranged, 250 cc. of a 6 per cent solution of gum acacia and 20 per cent glucose is introduced intravenously at the rate of 4 cc. a minute.

Today, an even more extensive use is made of both of these means at the Woman's Hospital for the purpose mentioned, only the acacia-dextrose solution is used more frequently as a prophylactic than the reference states.

In both shock and hemorrhage, blood transfusion (or acacia-dextrose solution given intravenously), if used promptly, helps to restore normal pulmonary ventilation, and it exerts an influence in this respect over a considerable period of time. It also helps to preserve the patient's resistance against infection by better maintenance of vital functions, an important matter not only in connection with the early pulmonary infections under consideration, but also in the general welfare and safety of the patient.

VOLATILE ANESTHETICS

Each of the volatile anesthetics produces pulmonary hypoventilation as the depth of anesthesia is increased. The important problem is to administer the minimum amount necessary to produce the required degree of anesthesia, and no more. From another point of view, it is to depress the respiration as little as possible. The depth of anesthesia by volatile anesthetics may be quickly lessened by spontaneous or stimulated pulmonary ventilation. At the end of the operation, the patient may be quickly deaneesthetized by the administration of carbon dioxide, as shown in the original report in 1920.⁹ With the symptomatic administration of carbon dioxide, there is thus secured a pliable control of the respiration under volatile anesthetics, and a quick elimination of them when they are no longer required. Hasty elimination of the anesthetics and complete expansion of the lungs are indicated at the end of the operation when there is considerable respiratory depression, or the patient is not properly oxygenating; when the depth of anesthesia was pronounced at any time; when the patient's respiratory tract reacted unfavorably to the anesthetic, or when there has recently been a respiratory infection or the history of one following a previous operation.

Of course, elective operations ought not to be performed soon after any acute respiratory infection, regardless of the type of anesthesia employed.

NARCOTICS AND NONVOLATILE ANESTHETICS

These substances are likewise respiratory depressants, depending on the amount administered and the usually unknown susceptibility of the individual patient. Their elimination cannot be hastened with the administration of carbon dioxide, or by any other practical means known. The respiratory depression they cause may last for hours. When used as a preliminary to the volatile anesthetics, they should be given only in small dosage. In the postoperative use of narcotics, the first administration should be withheld until the patient reacts from the anesthetic, and then only in the smallest dosage that will suffice. Within the first few hours following operation, the patient's lungs should be given as much opportunity as possible to expand spontaneously and without being unduly handicapped by narcotic respiratory depressants. Besides, it is important to keep the tracheobronchial secretions liquefied at this time, so that the medication should be directed accordingly.

CARBON DIOXIDE

During and at the end of the operation, carbon dioxide is administered as indicated by the patient's respiration, oxygenation and other special indications previously mentioned. Because most of the carbon dioxide is administered in the operating room, it is diluted with oxygen, generally 20 per cent carbon dioxide and 80 per cent oxygen. It is thus made convenient and pliable for different methods of anesthesia and apparatus. This is no particular improvement, however, over the original method for deetherizing at the end of the operation.³ But for use during the operation, it is considered preferable to have the carbon dioxide diluted with oxygen rather than with air. Besides, with some of the anesthetic apparatus air is excluded.

CONCLUSIONS

1. There is evidence that the pulmonary hypoventilation of anesthesia and operation is an important etiologic factor in early postoperative pneumonia.
2. There is evidence that the combining of means to prevent and promptly to alleviate this pulmonary hypoventilation with the symptomatic administration of carbon dioxide lowers the incidence of early postoperative pneumonia.
3. There is evidence that the prolonged respiratory depression caused by narcotics, nonvolatile anesthetics, shock and hemorrhage increases the incidence of early postoperative pneumonia and lessens the effectiveness of carbon dioxide as a prophylactic.

150 Riverside Drive.

The Upper Urinary Tract in Pregnancy.—Hofbauer found a definite hyperplasia of the wall and sheath of the ureter at its lower end and believes that this constitutes an obstruction to outflow at the bladder, causing the dilatation of the ureter throughout its whole length. . . . Grenme comparing the views of the various workers comes to the conclusion that there is atony of the upper urinary tract in pregnancy which makes it possible for the ureter, especially the right, to be compressed between the uterus and the psoas muscle, that dilatation of the urinary tract does not necessarily mean the presence of stasis, and that there may be delay in emptying the upper urinary tract without the kidney function being affected.—Baird, Dugald: *The Upper Urinary Tract in Pregnancy, Lancet* 2:983 (Nov. 5) 1932.

9. Coburn, R. C.: Blood Pressure in Operative Surgery and Anesthesia, J. A. M. A. 82: 1748 (May 31) 1924.

DISORDERS OF MOTILITY OF
THE IRIS

REPORT OF CASE

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A knowledge of the disorders of motility of the iris is frequently of considerable help in pointing to, if not determining, many abnormal conditions of the body as functional and organic disturbances, especially toxic and central nervous system diseases. The knowledge should be used by all, but it is of greater help to those who have not ready access to many of the more intricate or special methods of diagnosis, particularly laboratory or technical procedures.

To understand the disorders of motility of the iris it is desirable to consider its structure and its normal function. Within the anterior segment of the eye the iris forms a diaphragm which contracts or dilates to permit the entrance into the eye of the amount of light most favorable to satisfactory vision. To accomplish this there are two sets of muscle fibers, each having a different source and type of nerve supply. The contracting fibers, or the sphincter muscles, are under the control of the third cranial nerve, which contains, as well as its central connections, fibers of the autonomic nervous system. The third nerve also contains sensory fibers from the internal rectus muscles¹ and connections from the afferent arm of the light reflex arc. The distant relation of these two afferent pathways explains how, in the Argyll Robertson phenomenon, pupillary reaction to convergence is retained. Wilkinson² called attention to this in his assumption that the sensory fibers from the ocular muscles constitute the afferent arm of the reflex arc governing pupillary reaction to convergence. The afferent arm of the light reflex arc begins in the rods and cones of the retina and passes with the optic nerve fibers to the external geniculate body, where they leave the optic tract and pass to the superior colliculus, from which the pathway continues to the third nerve nucleus after semidecussating.

It is between the superior colliculus and the third nerve nucleus that the light reflex fibers are damaged, giving rise to the Argyll Robertson pupil. The spinal miosis, which frequently accompanies the loss of the light reflex, is due to a paralysis of the cervical sympathetic from degenerative cord changes. Sven Ingvar³ attributes the miosis to irritation of the third nerve due to early meningitic changes in the process of the disease. He also holds that the same type but a more advanced stage of the meningitis is responsible for the loss of the light reflex and that the pathway anterior to the colliculi may be responsibly affected. In both instances he dispenses with the assumption of a single focus which has never been found. It is reasonable to expect though that, if the miosis were produced by irritation from early meningitic changes, there would later occur a paralytic type of mydriasis. This is seldom seen.

The radiating fibers that dilate the pupil are governed by the sympathetic nerve supply with its center

in the ciliospinal ganglion in the upper thoracic part of the spinal cord. There are afferent fibers in the cord that connect the center with the brain, and some have held that the center is in the brain stem. Ingram, Ranson and Hannett⁴ found that dilatation of the pupil could be obtained by stimulating various points in the midbrain and pons, and that it was not confined to a center in the hypothalamic region as found by Karplus and Kreidl.⁵ The wide distribution of points producing pupillary dilatation experimentally is probably accounted for by the varied and numerous impulses, as psychic, visual, auditory and tactile, to the dilator fibers of the iris through the cervical sympathetic, and that these afferent pathways converge to and through the brain stem on their way to the ciliospinal ganglion. These are analogous to the afferent pathways from the muscles of convergence, on the one hand, and the retinal elements of the light reflex arc through the third nerve nucleus to the sphincter iridis,

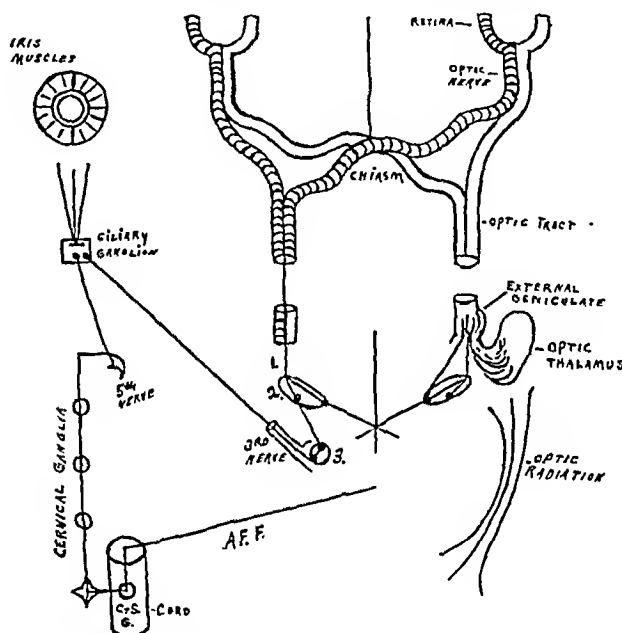


Fig. 1.—The afferent and efferent nerve paths of the pupillary reflex to light and the efferent arm of the sympathetic to the dilator pupillae. At 1 the light reflex fibers have left the optic tract at the external geniculate body and pass to 2, the superior colliculus, from which they semidecussate to 3, the third nerve nucleus. From the third nerve nucleus they pass out as efferent fibers through the ciliary ganglion to the circular (sphincter) muscle of the iris.

A.F.F. afferent fibers from the brain to C.S.G., the ciliospinal ganglion in the thoracic part of the spinal cord, from which fibers pass up the neck through the cervical ganglia into the cranial cavity and with a branch of the fifth nerve continue through the ciliary ganglion in the orbit to the dilator muscle of the iris.

on the other. From the ciliospinal center, fibers pass up through the cervical ganglia into the cranial cavity, and with one of the branches of the fifth nerve they continue to the iris through the ciliary ganglion in the orbit. The nerve supply to the tarsal muscles is also from the cervical sympathetic.

There are other factors, of course, which may affect the size of the pupil and its motility such as changes in the vascular tone, iris adhesions and the state of refraction.

The reaction of the pupil takes place unconsciously and involuntarily. The impulse is excited chiefly from

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1. Tozer, Frances M., and Sherrington, C. S.: Receptors and Afferents of the Third, Fourth and Sixth Cranial Nerves, *Proc. Roy. Soc. Med. S.B.*, London 82: 450, 1910.

2. Wilkinson, H. J.: The Argyll Robertson Pupil: A Contribution Toward Its Explanation, *M. J. Australia* 1: 267-272 (Feb. 19) 1927.

3. Ingvar, Sven: On Pathogenesis of Argyll Robertson Phenomenon, *Bull. Johns Hopkins Hosp.* 43: 363-396 (Dec.) 1928.

4. Ingram, W. R.; Ranson, S. W., and Hannett, F. I.: Pupillary Dilatation Produced by Direct Stimulation of Tegmentum of Brain Stem, *Am. J. Physiol.* 98: 687-691 (Nov.) 1931.

5. Karplus, J. P., and Kreidl, A.: *Arch. f. d. ges. Physiol.* 129: 138, 1909; 135: 401, 1909; 143: 143, 1909.

two sources: first, by light and second, by sensory stimuli, each of which has a cortical representation. The light impulse carried indirectly from the optic back over the third nerve produces contraction of the pupil, and as the light diminishes dilatation takes place. The reaction is very sensitive, taking place in the two eyes equally, even though only one eye receives the light. Its cortical representation is manifested by contraction of the pupil with the thought of a bright light. On the other hand, sensory stimuli throughout the body produce dilatation by partly stimulating the ciliospinal center and by partly inhibiting the oculomotor center. The cortical representation is psychic, as manifested by dilatation from fear and other emotions. Removal of the normal sensory impulses, as in sleep or hypnosis, produces a contracted pupil. To go beyond this, abolition of the third nerve impulses takes place with dilated pupil.

The associated pupillary reaction is the contraction that takes place in association with convergence and in accommodation. In infants, the pupils are contracted; according to my observation, in from eighteen months to two years, they become more dilated. Again,

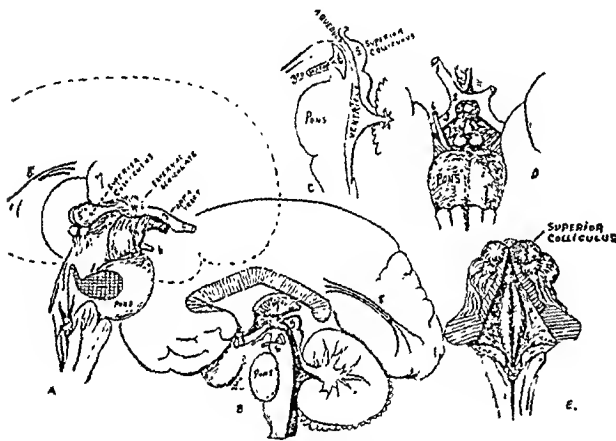


Fig. 2.—1, optic nerve (D); 2, optic chiasm (D); 3, optic tract (A, B and D); 4, external geniculate body (A); 5, superior colliculus (A, B, C and D); 6, third nerve and nucleus (A, B, C and D); 7, optic thalamus (A and B); 8, optic radiation (A and B). These semi-diagrammatic drawings have the optic pathways exaggerated. They are presented for a quick visualization, especially for those who have little occasion to consider them.

in later life they become more contracted. These changes are probably accounted for by the development and later stabilization of the sensory nervous system. In old age the contraction increases and the reaction becomes sluggish from tissue rigidity.

The pupil and the ciliary body react to poisons. Belladonna and cocaine dilate them, the former by paralysis of the autonomic terminals of the third nerve, cocaine and epinephrine by stimulating the cervical sympathetic terminals. Miotics contract the pupil by stimulating the autonomic terminals of the third nerve.

THE DISORDERS OF MOTILITY OF THE IRIS

The disorders of motility of the iris manifest themselves by diminished reactions or alterations in the size of the pupil. The chief manifestations are an abnormally large pupil or mydriasis, an abnormally small pupil or miosis, and a loss of the light reflex, or Argyll Robertson pupil. Other manifestations are unequal pupils or anisocoria and loss of the convergence reflex.

Mydriasis and miosis appear as a paralytic or as a spastic type of disorder.

Anisocoria, or unequal pupils, is seen in pathologic conditions affecting the eyes unequally or unilaterally, or it is a condition seen in those who are perfectly healthy or at most have a functional neurosis. According to Duane,⁶ in some cases it indicates tuberculosis.

Paralysis of the convergence reflex is the inverse of the Argyll Robertson pupil and is seen in cases of convergence paralysis occurring in functional and in organic central nervous diseases, such as tabes and multiple sclerosis.

Frequently observed with these disorders is an irregularity of outline of the pupil usually due to inflammatory changes of the iris; when not due to this, according to Taylor,⁷ "it is to be attributed in most cases to lesions of the nerves innervating the iris and to a consequent imperfect action of the muscles."

Hippus, which is an alternate contraction and dilatation of the pupil, is largely put in the class of an exaggerated normal state, as the iris normally varies constantly in size. When marked, it is usually pathologic and is seen in such states as hysteria, chorea, mania and meningeal irritation.

SPASTIC MYDRIASIS

Mydriasis, or dilatation of the pupil, occurs as a spastic mydriasis from irritative lesions in the neck and spinal cord and from cerebral irritation of the most widely differing kinds. Spastic dilatation occurs during states of shock from various sensory stimuli; as in peripheral irritation, gastro-intestinal disturbances, during teething, and from various psychic stimuli which excite the emotions, such as extreme fear. In all instances the dilator fibers are stimulated through the cervical sympathetic. It may be a prodrome of a paralysis of the cervical sympathetic and thus is associated with all its causes.

The normally wide pupil seen in refractive errors and in asthenic and nervous conditions reacts promptly to light; also in spastic mydriasis the pupil usually still reacts, a distinction from paralytic mydriasis. In the blind eye the pupil ceases to react from removal of its normal stimulus.

PARALYTIC MYDRIASIS

Paralytic mydriasis, the more important of the two, is a dilatation of the pupil occurring from lesions that paralyze the third nerve or its central connections and, when so isolated, affect the sphincter fibers to the iris. Often there is an associated involvement of the fibers to the ciliary body, so that a dilated immobile pupil is found usually connected with loss of accommodation, constituting an ophthalmoplegia interna (or total iridoplegia).

Syphilis, particularly cerebral syphilis, affecting the third nerve nucleus, is the chief cause. Other causes are diseases of the central nervous system, especially the parasymphilitic diseases, tabes and dementia paralytica, intracranial lesions such as meningitis after the early stage, extradural and subdural hemorrhage, often producing an early homolateral fixed dilatation, trauma of the base of the skull with injury to the third nerve, toxins of diphtheria and of putrefied meat affecting the third nerve nucleus, local lesions and drug poisons such as belladonna affecting its terminals, coma, severe physical shock such as exsanguination, and impending death from any cause.

6. Duane, A., in Fuchs.²⁰
7. Taylor, E. W., in Osler, William: *Modern Medicine*, Philadelphia, Lea & Febiger 7: 532, 1910.

SPASTIC MIOSIS

Spastic miosis is produced by lesions which irritate the third nerve or its central connections. Such intracranial lesions are early cerebral meningitis, thermic fever, and hemorrhage in the region of the pons or ventricles; also, occasionally, by producing meningismus or meningeal irritation, plethoric states of the brain such as acute high fevers, uremia and alcoholism. It occurs in certain rare cases of cyclic oculomotor paralysis, and locally it occurs with ocular inflammations and in conjunction with spasm of accommodation. In Sollmann's Manual of Pharmacology⁸ it is stated that the inhibition of the normal sensory impulses flowing to the oculomotor nucleus brought about by narcosis is produced by morphine in a specific manner.

PARALYTIC MIOSIS

Paralytic miosis occurs from paralysis of the cervical sympathetic nerve. Paralysis of the cervical sympathetic presenting the manifestations of a Horner syndrome will be discussed later with the case report. The spinal miosis that frequently accompanies loss of the light reflex is produced usually by a degenerative lesion of the cord. The loss of the light reflex termed iridoplegia and commonly known as an Argyll Robertson pupil is caused by the same malady affecting the brain stem. This manifestation is seldom seen except in cases of tabes dorsalis or dementia paralytica. In these diseases loss of the light reflex becomes the outstanding ocular symptom, occurring in over 60 per cent of the tabetic cases, and of this 60 per cent from 25 to 30 per cent present a spinal miosis. Sachs⁹ says that it is the earliest objective and by far the most constant symptom of tabes.

The presence of the fully developed Argyll Robertson pupil all but affords positive proof of syphilis of the central nervous system. Very rarely it is seen in nonsyphilitic conditions such as tumor of the third ventricle, certain traumatism, poisoning from lead, tobacco and alcohol, epidemic encephalitis and multiple sclerosis. Irregularities in its outline may precede or accompany the Argyll Robertson pupil, and the loss of the light reflex may be seen with a normally wide pupil, but total iridoplegia with a dilated pupil is rather an evidence of cerebral syphilis.

In supranuclear or cortical lesions affecting vision, such as the temporary blindness seen in uremia, puerperal amaurosis, and the amaurosis of postbasic meningitis occurring in cerebrospinal meningitis, and acute cerebral amaurosis of infancy, the light reflex arc remains intact. Here with loss of vision the pupil reacts promptly to light.

REPORT OF CASE

History.—Mrs. A. H., aged 27, came to the clinic complaining of ptosis of the right eyelid of six months' duration and a more recently developed periodic headache.

Her past history was negative except that she had been subject to infrequent attacks of migraine and had had a simple colloid goiter. The gland produced little prominence, but she suffered from attacks of choking sensations for which she was advised to have a thyroidectomy.

Thyroidectomy was done, April 1, 1932, at one of the Richmond hospitals, and, before she left, a partial ptosis of the right eyelid had developed. The patient was told that this was an unexplained third nerve involvement, that it was not connected with the operation, and that it would clear up

in the course of time. In the course of a few months the lid condition became worse. Later the sick headaches increased in frequency and severity, occurring every other week-end and located in the region of the occiput. An occasional shooting pain passed through the eye. The patient remarked on the possibility of losing the sight of the eye.

Description of Examination.—The vision in both eyes was 20/20, or normal. There was a small amount of compound hyperopic astigmatism in both eyes. Except for the refractive error the left eye was entirely normal.

The right lid drooped to about one third of the distance over the pupil, and the tissue at the upper part of the lid appeared relaxed and full. From further attempt to elevate the lid by the frontalis muscle the right brow was raised and the frontalis muscle was in varying degrees of spasm, causing a fullness over the brow and, during periods of relaxation, an increase in the lid droop.

The right lid acted quickly and fully. It was elevated as high as the left lid when the eyes were rotated up. The right pupil was from 2 to 2.5 mm. in a moderate light as compared to the left, which was 4 to 4.5 mm. The iris was active directly and consensually. The pupils dilated equally under homatropine. There was slight but distinct dilatation under cocaine; epinephrine was not instilled. There was no extraocular muscle imbalance. The media and fundus were normal.



Fig. 3.—Appearance of patient with paralysis of the right cervical sympathetic. The points of interest are the small pupil, the drooping lid and the spasm of the frontalis muscle, which is not a part of the syndrome but a result of the partial ptosis.

There was no discernible difference in the vascularity of the two sides, and no difference in the temperature could be elicited.

Analysis of the Examination.—The partial ptosis and the contracted pupil seen here are the important symptoms constituting a Horner syndrome, which is found in paralysis of the cervical sympathetic. In a third nerve paralysis with ptosis, if the pupil is altered it is dilated. Other symptoms occurring in a Horner syndrome are a difference in the fullness of the vessels on the two sides of the face, the affected side being redder and warmer and showing more moisture, in recent cases, than the unaffected side. Later the opposite condition prevails. The eyeball appears to retract into the orbit. The partial ptosis is due to a paralysis of the superior tarsal muscle.

The increased headache was attributed to two factors, the fatigue brought on by spasm of the frontalis muscle, and the uncertainty of the nature and outcome of the trouble. The synergistic action in this case was under control of the will, and in this respect unlike the synergistic or the antagonistic action of the extra-ocular muscles in old paralytic cases or in cases of concomitant strabismus in which the muscle spasm is due to an unconscious impulse to suppress vision. In these cases headache is not present, unless the case is considered before the strabismus develops; then headache may be present from the muscular strain of retaining binocular fixation.

8. Sollmann, Torald: Manual of Pharmacology, Philadelphia, W. B. Saunders, 1917, p. 223.

9. Sachs, Bernard, in Osler: Modern Medicine, p. 682.

Etiology.—The causes, according to Fuchs,¹⁰ are usually "the coarser lesions and most frequently pressure on the nerve from tumors in the neck such as goiter or enlarged lymph glands. More rarely it is caused by traumatism as fracture of the clavicle, or operations in this region as extirpation of tumors and sympathectomy. Other causes are tuberculosis at the apex of the lung, neuritis of the cervical plexus, tumors and injury of the spinal cord and spinal cord lesions as tabes and syringomyelia. In most cases the cause is impossible to find."

Treatment.—According to Fuchs, "the paralysis, in addition to moderate disfigurement due to the ptosis, causes no annoyance, is not infrequently discovered accidentally, and is commonly incurable."

The treatment in this case was directed toward the relief of headache. The patient was told that tumors of the neck, such as an enlarged thyroid gland, at times brought about such a paralysis, but that in her case it was probably due to trauma of the operation, and that in all cases the chance for recovery was not good. She was assured that besides the cosmetic effect no harm would come from the paralysis, and she was advised to resign herself to this outlook and to relax the frontalis muscle. She was also advised to wear her glasses constantly to relieve ciliary strain.

These instructions were carried out, and six weeks later she returned to the clinic definitely improved. She said that she felt very much better and that she had had only two very mild attacks of headache. The ptosis was less, the fullness of the lid and brow had disappeared, and there was only an occasional mild spasm of the frontalis muscle. She seemed satisfied that there was no more injury than actually existed.

THE RÔLE OF FINANCIAL LOSSES IN THE PRECIPITATION OF MENTAL ILLNESS

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AND

LEONA CHIDESTER, M.A.

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It is the widespread prevalent opinion that the economic strain and material loss of the present financial crisis has been provocative of a great increase in mental ill health. There have been many statements in the lay press and a few in the medical press regarding this relationship, but many of these statements, though of good authority, are opined generalities; a few, however, are the result of case studies, and it is in these that we are interested in this paper.

Statistics on the number of first admissions to state and government hospitals in the states of New York and Massachusetts are presented by Thom,¹ which show an increase only from 73.6 per hundred thousand of population in 1927 to 76.9 in 1931 in New York, and from 68 per hundred thousand of population in 1927 to 70.8 in 1931 in Massachusetts. It is his conclusion that "there is little to substantiate the contention that the depression has actually caused any appreciable increase in frank mental disease." A report from Canada² states that the population in hospitals for mental illness increased less in 1931 than in 1930. It is concluded that this indicates that the depression had not by 1931, at least, resulted in an increase of mental disorders requiring hospitalization. In a study from

the Elgin (Ill.) State Hospital,³ 150 cases of first admissions of patients with functional psychoses were carefully reviewed to determine the relationship of the mental breakdown to the economic stress. "Only 14 of 150 cases (9.3 per cent) studied had any manifest connection with the financial depression, and there was only one case in which the onset and development of the psychosis bore a definite relationship to the depression." One defect of this study lies in the fact that 113 of the 150 cases were diagnosed as dementia praecox, while only 19 cases were diagnosed as manic-depressive psychoses. It is not stated whether the cases were consecutive admissions, for they were chosen entirely at random, special selection being avoided.

METHOD OF STUDY

In the present study we have three purposes: (1) to determine the frequency of (a) real and (b) delusional (fancied) economic loss as a precipitating factor in the production of mental illness; (2) to determine the rôle of this financial loss in the patient's illness, i. e., to determine what special psychologic significance it might have, and (3) to determine the influence of the present economic depression on the mental health of the populace as judged by an intensive study of approximately 650 cases of mental sickness of various types.

Eliminating all organic cases, all incompletely studied cases and those of doubtful diagnosis, a series of 272 cases in which the patients were consecutively admitted to the Menninger Clinic from 1926 to 1929 was carefully reviewed. The cases of a similarly selected group of 374 patients admitted between 1929 and 1933 were also reviewed. These cases were all carefully studied, and the great majority had been presented at staff conferences and the mechanism of the mental illnesses investigated. Many of the patients were in residence in the sanatorium or the hospital for varying lengths of time. All those cases showing a relationship between economic loss or concern were again carefully reviewed to ascertain, if possible, the relationship between the economic situation and the symptoms manifest in the illness.

In classifying the relationship between the economic status of the patient and his illness, certain obvious groupings were conspicuous: (1) those with reactions to an actual loss, and (2) those with reactions to a threatened or a delusional loss.

Of the cases with an actual loss, there is a group in which the relatives of the patient placed much weight on the loss as a cause of the mental breakdown, but the patient regarded it as of minor importance. Such a case occurred in a woman, aged 56, whose condition was diagnosed as involution melancholia. There was a severe financial loss to the family through the failure of a business, and to this the family ascribed the onset of the patient's illness. Following this, however, she successively failed in election to a state office in a woman's club, then in election to a state political office, and also in the compilation of an historical document. She gradually became depressed and restless. While under observation she appeared distressed, moaned, cried, was unsteady of gait and demanded attention and sympathy. She complained of her eyes, teeth, gums, stomach, bladder, vagina and bowels, and continuously bemoaned her hopelessness and the loss of her mind, and how bad her family must feel. She complained

10. Fuchs, H. E.: *Textbook of Ophthalmology*, ed. 7, Philadelphia, J. B. Lippincott Company, 1923.

From the Menninger Clinic and Hospital.

1. Thom, D. A.: *Mental Hygiene and the Depression*, *Ment. Hyg.* 16: 564-576 (Oct.) 1932.

2. Spaulding, H. B.: *Mental Hospital Population*, *Ment. Health*, Toronto 7: 41-44 (Sept.-Oct.) 1932.

3. *Collected and Contributed Papers of Elgin State Hospital*, Chicago, Paramount Press, December, 1932, pp. 272-274.

continuously, but during the several months of observation and in many personal interviews she never mentioned money.

In the second group of cases with an actual loss, the relatives placed little emphasis on the loss, although the patient placed great emphasis on it. This situation is illustrated by the case of a successful, conservative, shrewd grocery merchant, aged 49, who, in attempting to expand his business, borrowed and invested several thousand dollars in a creamery. He associated himself with a partner whom he had known only a few weeks and to whom he gave entire authority to manage the creamery. A state-wide milk strike by farmers occurred shortly after the creamery project was launched, and the business threatened to fail, though without loss to the patient. Some years previously he had lost a large sum of money in a poor investment, but had been very little upset by it. In the present situation the patient became sleepless and extremely restless; repeatedly he would strike his head against the wall and continuously bemoan his loss. His family, however, had tried to show him how the whole situation could be remedied, but this effected no change in his attitude or behavior. During the period of hospitalization, the family did succeed in making good his losses, a fact which he accepted, but he continued in his extreme depression to wring his hands, bump his head and restlessly pace the halls. In this case it was apparent that the investment was carelessly executed, and that it probably was the result rather than a cause of his illness.

Then there are two groups in which no actual loss had occurred: patients with a delusional loss and those with an anticipated loss. In the first group, there existed the belief (delusion) that a loss had occurred. This is illustrated by the case of a farmer, aged 51, who had a manic-depressive psychosis, depressed phase. He had been successful, but had always worried over the possibility of financial loss; he had enforced a niggardly manner of living on his rather large family. For a period of several months before entering the hospital he had become more irritable and had absented himself from home a great deal. The town bank closed, tying up a small amount of money. His wife was a chronic invalid, and he complained of the burden of caring for her and began talking of suicide. While in the hospital he told of a shooting scrape thirty-five years previously during which he had killed a man. He told of keeping intimate company with a town widow for some years, having purchased two cars for her and supported her. He believed that his family was starving, that the farm would certainly have to be sold, and that his sins were the cause of his supposed economic failure.

In the second group without an actual loss, the patients were concerned with a threatened or an anticipated loss. A farmer, aged 50, was undecided as to the method of harvesting his wheat. It was apparent that he was wasting time, and when he was urged to begin the harvest he suddenly hired four combines to do the work, which was unnecessary. Wheat was selling at 25 cents a bushel, but from this time on the patient talked of being broke, of having spent so much money on life insurance and of having invested so much in land that he would be "wiped out." He insisted that he owed so much that he could never "get out," and that there was no use of even trying because he knew he was licked. He became suicidal and very depressed and tearful. He entirely recovered.

RESULTS

The table shows the frequency of the occurrence of a financial loss in the history of the patient and his reaction to it, and also the frequency of occurrence of a delusional or an anticipated loss in the mental picture.

In the total series of 646 cases, an actual financial loss which was regarded by the patient, by the relatives or by both as a causative factor in the illness occurred in 38 instances, or in 5.8 per cent of the cases. During the years of prosperity from 1926 to 1929, 17 of 272 cases (6.2 per cent) showed financial loss, compared to 21 of 374 cases (5.6 per cent) during the years of

Reaction to Financial Loss During Period of Prosperity and During Period of Depression

	Total Num- ber of Cases	Occur- ence of Actual Loss	Patient Uncon- cerned About Actual Loss	Exag- gerated Response to Actual Loss	Delu- sional Loss	Delu- sions of Impend- ing Loss
Psychoses, 1926-1929						
Manic-depressive psychoses.....	66	8	1	7	3	1
Involution melancholia.....	13	2	0	2	2	0
Schizophrenia.....	46	1	0	1	0	0
Paranoid states.....	20	1	0	1	3	1
Exhaustion psychoses.....	3	0	0	0	0	1
Total.....	148	12	1	11	5	3
		(8.1%)				
Psychoneurosis, 1926-1929						
Simple depression.....	12	1	0	1	0	0
Neurasthenia.....	33	1	0	1	0	0
Obsessional neuroses.....	13	0	0	0	0	0
Anxiety neuroses.....	16	1	0	1	0	0
Anxiety hysteria.....	6	0	0	0	0	0
Conversion hysteria.....	22	2	0	2	0	0
Alcoholism.....	8	0	0	0	0	0
Drug addiction.....	6	0	0	0	0	0
Perverse personality (neurotic character).....	8	0	0	0	0	0
Total.....	124	5	0	5	0	0
		(4.0%)				
Psychoses, 1929-1933						
Senile psychoses.....	30	2	0	2	0	5
Involution melancholia.....	48	2	1	1	2	1
Manic-depressive psychoses.....	76	12	2	10	2	5
Schizophrenia.....	68	1	1	0	0	0
Paranoid states.....	43	0	0	0	1	1
Total.....	274	17	4	13	5	12
		(6.2%)				
Psychoneuroses, 1929-1933						
Simple depression.....	19	2	0	2	1	1
Neurasthenia.....	19	0	0	0	0	0
Obsessional neuroses.....	12	0	0	0	0	0
Anxiety neuroses.....	16	1	0	1	0	0
Anxiety hysteria.....	10	0	0	0	0	0
Conversion hysteria.....	24	1	0	1	0	0
Total.....	100	4	0	4	1	1
		(4%)				

depression from 1929 to 1933. Thus there was a smaller percentage of cases associated with financial loss during the period of economic depression than during the years of economic prosperity.

In comparing the psychotic groups of the two periods, we found that financial loss was a factor in 8.1 per cent of cases during the period of prosperity compared to 6.2 per cent of the cases during the years of depression. The frequency of losses in the psychoneurotic cases remained 4 per cent of the total in both periods.

COMMENT

In studying these results, it is debatable whether one should include cases in which the relatives laid emphasis on the financial loss as a cause and the patient appeared unconcerned. In the instance cited as illustrating this

group, in which the loss was rather distant and the patient made no reference to the loss, the money can scarcely be considered as a direct cause of the illness. The conflict within the individual is far greater than the external struggle. If such cases are disregarded, comparison of the psychotic groups shows that 7.9 per cent of the cases were precipitated by financial loss during the years of prosperity (1926-1929) compared to only 4.7 per cent of cases during the years of depression (1929-1933).

This study is based on a series of cases seen in private practice, and the patients hospitalized were in a private institution. Consequently, the question might be raised as to the comparison of the results shown by a similar study of patients in state hospitals. It should be pointed out that many cases included in this group studied in the clinic were entirely or almost entirely charity cases. Furthermore, a large percentage of patients placed an exaggerated emphasis on the loss, i. e., had ideas regarding the loss which were a part of the symptomatology rather than the etiologic precipitant. Only in five instances (less than 1 per cent) did the relatives stress the actual loss as of considerable importance when the patient seemed unconcerned about it. The study at the Elgin State Hospital referred to corroborates the results of this study, that in admissions to state hospitals the direct economic crisis was an infrequent causative factor in the patient's illness.

It is true that there has been a slight increase in admissions to state hospitals, but first admissions to schools for the mentally deficient have also increased noticeably. Certainly the depression has not caused an increase in hypophrenia, and it seems probable that a considerable part of the increase in admissions to state hospitals may be the result of families seeking custodial care for senile or for other chronic mentally ill relatives whom they are no longer able to support in their own homes or in private hospitals.

The specific rôle played by the financial loss in its relationship to the illness varies in each case. In general, one can state that it is primarily a precipitating factor rather than a cause. Thus, while it occurred more frequently in depression pictures, it precipitated the classic clinical types of many of the psychoses and psychoneuroses. There is, then, no typical mental picture precipitated by financial loss.

As has been pointed out, the majority of patients show an emotional response out of proportion to the facts, whether there is an actual loss or only a delusional or an anticipated loss.

It is particularly pertinent to consider why it might be that there is less mental illness precipitated by financial loss during a period of great economic depression than during a period of general prosperity. At least during the depressions (in which the majority of these cases fall), there is a clear-cut formula which explains this apparent paradox. Mr. X, an unusually successful business man, came to us some years ago for treatment during his second major mental depression; throughout his life he had deprived himself of pleasure and penalized himself heavily in various ways. Notwithstanding this, he accumulated considerable means. The economic depression developed, and he lost everything. During this period, however, he felt fine; he was confident that he could make money again. One can see clearly in this case that the patient was relieved of the necessity of the punishment of an attack of

melancholia by the punishment inflicted by the economic depression and his consequent loss of money.

In most cases of mental depression, the patient expresses an exaggerated conscious guilt reaction, and in the cases precipitated by financial loss he often makes an association with this loss. Such patients feel "sinful," are extremely self-depreciatory, and blame themselves for the starving condition of their dependents and the ruined state of their homes. Frequently they inflict injury on themselves, self-mutilation, self-infliction of pain and even suicide. It is well recognized that this ideation and behavior are punishment for the sense of guilt on account of unconscious hate for the loved ones (as clearly worked out by Freud, in "Mourning and Melancholia," and by Karl Abraham). Further, it is clear that the rationalizations as to the cause of their conscious guilt (e. g., masturbation, poor judgment, "sinfulness") only mask a greater unconscious sense of guilt for other reasons. When an economic depression occurs, with its attending struggle and loss, it serves in many instances to propitiate this universal unconscious sense of guilt. Hence, during such a period, fewer persons are forced into a self-punitive depression reaction, and one would expect fewer cases of mental disorder from this causative factor.

SUMMARY

A total of 646 cases of "functional" mental illness (psychoses and psychoneuroses) were reviewed, and 38 instances (5.8 per cent) in which financial losses occurred as a causative factor in the illness were found. In 272 cases seen during the years of prosperity from 1926 to 1929, 6.2 per cent of the patients had an economic reversal as the precipitating agent in the illness. In 374 cases seen during the economic depression, 5.6 per cent of the patients gave a history of economic reversal as a factor in causing the illness. Of the psychoneurotic cases, 4 per cent of the patients had such a history during both periods, while of the psychotic cases, 8.5 per cent had such a history during the years of prosperity, compared to 6.2 per cent during the years of depression.

CONCLUSIONS

1. A smaller percentage of cases of mental illness showing a direct causal relationship to financial loss occurred during a period of national economic depression than during a period of national economic prosperity.

2. Financial losses, whether actual or fancied, represent a very small percentage of the total number of precipitating factors of mental disease, and thus play a minor rôle as causal factors.

3. Economic loss as displayed in the conscious reactions of the mentally sick patient in many instances carried a surcharge emotional value far exceeding the actual value. Often there is no actual loss, but a delusional loss or an anticipated loss which differs in no way in its psychologic significance to the patient from a real loss.

4. From intensive individual case study, it is suggested that the less frequent occurrence of mental illness associated with personal financial loss during the economic depression may be explained by the fact that the actual situation of economic stringency serves to satisfy the unconscious sense of guilt which under normal economic conditions has less opportunity for propitiation.

Clinical Notes, Suggestions and New Instruments

THE EFFECT OF EPHEDRINE IN THE TREATMENT OF MYASTHENIA GRAVIS: SECOND REPORT

HARRIET EDGEWORTH, TUCSON, ARIZ.

Three years ago I¹ published a short report of progress on the use of ephedrine in a case of myasthenia gravis. The correspondence that has developed with physicians and relatives of patients having myasthenia gravis seems to make a further report desirable.

In the past three years, except for short periods when the ephedrine has been discontinued or the dose increased, for experimental purposes, I have taken a daily dose of $\frac{1}{8}$ grain (48 mg.) of ephedrine sulphate or of ephedrine hydrochloride with slow but continuous improvement. The rate of improvement has been apparently uniform; that is, the amount of improvement during the last six months seems to have been as great as during the first six months. Larger doses give me a temporary increase in strength, but these dosages are invariably followed in two or three weeks by such adverse symptoms that I have always been compelled to reduce the dose. When in recent reports on the subject I see doses larger than those here recommended, I wonder how carefully and how long the effects of such dosages have been followed. The humiliating effect of helplessness leads both the myasthenic patient and his physician to seek the maximal effect from any remedy. This leads them to err on the side of excessive doses of ephedrine. In my experience, the dosage that will give the greatest effect in the first few weeks will not produce continuous and sustained improvement over a long period. An added advantage of using a smaller dose than the maximum that will be tolerated is that in emergencies, such as exposure to cold or heat, the depressing effects of a menstrual period, respiratory infections, or unusual exertion—all of which affect the myasthenic symptoms adversely—the dose can be temporarily increased with resulting benefit. As concrete examples of this, an extra dose of ephedrine before an unavoidable exposure to cold, as on a railroad or a motor trip, will prevent a severe stiffness in all my muscles which would otherwise occur and which would have such a temporary paralyzing effect that I would have to be lifted out of the car, or into the train.

Periods of intense heat are very prostrating to patients with myasthenia gravis; in fact, it may be the cause of death. For three summers I have definitely protected myself against this depressing effect by increasing the daily dose during a period of very hot weather. The myasthenic patient shows a progressive fatigue or weakness toward evening. However, the increased exertion that is possible on an increased dose is shown when I take an extra dose before going out to dinner in the evening. I am able to rise from the table unaided at the end of the dinner, behave as a normal person during the evening, and leave without falling down the front steps on departing. Without this extra dose I know from many embarrassing occasions that I should not be able to do this. A chronic sinus infection with recurring attacks which resisted all attempts at treatment locally disappeared after I began taking ephedrine. These recurring sinus infections so accelerated my downward progress that in 1927 I resorted to an autogenous vaccine, following which the sinus infections became less severe and less frequent, and there was some improvement in the myasthenic symptoms. But one week's use of ephedrine produced greater improvement than ten months' use of the vaccine. Although I live and associate normally with other people who occasionally have colds, I have been free from them for over two years.

The long continued use of ephedrine may produce adverse effects, the control of which I have begun to consider. But its beneficial effects far outweigh any of these I have discovered. As a matter of wisdom, I shall discontinue its use as soon as I can do so without losing the gains it has pro-

duced, but recent attempts indicate that this is as yet far from possible.

The use of glycine in the treatment of myasthenia gravis is being studied with apparent success by Dr. W. M. Boothby at the Mayo Clinic.² Success also has been reported from its use by Dr. Remen³ in Professor Kehr's neurologic clinic at Münster, Germany. To what extent ephedrine will increase the improvement to be derived from glycine remains to be determined. From the communications I have received from patients with myasthenia gravis I am led to question the supposed rarity of the disease. The rarity would seem rather to be in the correct diagnosis of the trouble. Certainly in the early undiagnosed stage, when the only symptom is an excessive fatigability, which is very hard to appraise because there is no reliable test for it, and when these patients are the easy victims of respiratory infections, surgical procedures, depressant drugs and overexertion of all kinds, the number must be numerically significant.

305 East Third Street.

MALARIA TRANSMITTED BY HYPODERMIC SYRINGE

OLIVER C. NICKUM, M.D., OMAHA

The incidence of malaria in Nebraska is exceedingly rare, and the following explanation of how one new case originated seems quite interesting for that reason:

B. R., a man, aged 37, was seen, January 17, by students in the outcall service of the University of Nebraska College of Medicine, at the patient's home following a chill that lasted approximately one and a half hours. The only complaint at the time of this visit was a feeling of extreme exhaustion; the patient had a temperature of 102.5 F. At this time there was quite a widespread epidemic of influenza, and after a thorough physical examination had been made the students interpreted the chill to be evidence of the onset of this condition and prescribed accordingly. The patient slept reasonably well that night and remained in bed the following two days as he had been directed. January 20, the students were asked to see the patient again because of a chill very similar to the first. At this time they requested a consultant to attend the case with them. The patient stated that he had had intermittent chills and fever occurring at regular intervals and beginning about 5 p. m. on each occasion throughout the past two months. The latter six weeks he had been a patient in the county hospital and, according to his statement, malaria had been considered there with the result that several blood tests had been made, with negative results. The differential diagnosis at that time was between dysentery, hepatic abscess, empyema and malaria. The patient left the county hospital without being dismissed, because of dissatisfaction with his progress. As malaria seemed most probable, it was determined to make blood smears immediately, during this chill, and numerous organisms of the tertiary type were found. Previous to the report for the blood smears, 10 grains (0.65 Gm.) of quinine sulphate was given, which shortened the length of that chill to about one-fourth the duration of those preceding.

The patient had been in Omaha constantly during the past two years, and the history of past illnesses was irrelevant to the present complaint. Examination of the forearms showed that both basilic veins were partially thrombotic, and the patient confessed that he had been using morphine over the past six years. Questioned about other narcotic users who might have had access to his hypodermic equipment, he gave the name of one individual who, he said, began to have a series of chills and fever resembling his own about three days after they had jointly used this equipment.

A talk with the other patient, who had been transferred to another hospital, brought out the fact that six years before, while he was residing in Mexico, he had received two courses of quinine therapy for what he described as only a mildly incapacitating illness and which he remembered as being made up chiefly of chills and fever; between these attacks, as he

2. Boothby, W. M.: Myasthenia Gravis: A Preliminary Report on the Effect of Treatment with Glycine, Proc. Staff Meet., Mayo Clin. 7: 557-560 (Sept. 28) 1932; Myasthenia Gravis: Second Report on the Treatment with Glycine, *ibid* 7: 737-756 (Dec. 28) 1932.

3. Remen, L.: Zur Pathogenese und Therapie der Myasthenia Gravis pseudoparalytica, Deutsch. Ztschr. f. nervenh. 128: 66-79, 1932.
From the Department of Internal Medicine, University of Nebraska College of Medicine.

1. Edgeworth, Harriet: A Report of Progress on the Use of Ephedrine in a Case of Myasthenia Gravis, J. A. M. A. 94: 1136 (April 12) 1930.

remembered it, he felt entirely well and able to work. This evidence seemed to make the more recently appearing case the source of infection, and it is evident that B. R. served to activate the plasmodium which had been injected into him by the contaminated needle enough so that when they jointly used the hypodermic equipment on a second occasion he was able to introduce an organism of increased virulence into the primary carrier, which made his disease again active after having been quiescent over the past five years. B. R. has been severely ill over the past two months, whereas the other man has had but mild chills and fever.

There was recently reported at one of the hospital clinics another case of malaria definitely proved by the finding of the organism; the patient had had no contacts outside of Nebraska for five years, and it was at that time entirely unexplainable where or how the infection was acquired. In view of the course of events in the two cases here described, it might be that the case just mentioned and others which occasionally have puzzled physicians in the past can be explained on the basis of transmission by hypodermic syringe.

METHYLENE BLUE IN CARBON MONOXIDE POISONING

MILTON A. BELL, M.D., PHILADELPHIA

The recent reports on the use of methylene blue (methylthionine chloride, U. S. P.) in carbon monoxide poisoning and in cyanide poisoning prompted us to prepare and have available for use in the accident ward and on the ambulance 50 cc. units of a sterile, aqueous 1 per cent solution of the dye. This is the report of our first case in which this substance was used:

A white man, aged 53, brought by the police to the accident ward, March 3, 1933, at 12:20 p. m., had been found at noon in a room filled with illuminating gas; he was unconscious when found and had left a note stating that he was "ending it all," and timed the note at 11:05 a. m.; four jets of a gas range were found wide open. On admission to the hospital the patient was unconscious and cyanotic, with cold extremities; a feeble pulse could be palpated. He was immediately placed in shock-position and a mixture of oxygen (95 per cent) and carbon dioxide (5 per cent) was administered, and caffeine sodiobenzoate, 3¼ grains (0.25 gm.), was given by hypodermic injection. Up to this time the patient was totally unconscious, did not respond to painful stimuli and did not move his head or extremities. The pulse wavered in quality. At 12:25 p. m. we started the intravenous injection (by syringe) of the warmed methylene blue solution. When about 30 cc. had been given, the patient began to move his head and then his arms and legs, so that he had to be restrained. The injection of the dye was completed without any difficulty, taking about three minutes for the 50 cc. The pulse had picked up considerably. At 1 o'clock the patient responded with a mumble when questioned and moved a little in response to painful stimuli. At 2:30 he was examined by a neurologist, who made the following report: "The patient was stuporous. The extremities were in a hypertonic state in the proximal parts and hypotonic in the distal parts, as the hands and feet. The patient showed a rather interesting phenomenon, a cataleptic involvement in the upper limbs. These parts were molded in various positions and remained that way for some time. After about five minutes of irritation, the patient asked 'Where am I?' and responded to mild commands, as raising the arms and protruding the tongue. The pupils responded to light. There were no signs of paralysis of any of the limbs. The reflexes were present bilaterally. There was no Hoffmann or Babinski sign. Some increased tension in the muscles of the neck was noted. Impression: It will be interesting to follow this case as to the neurologic picture. The cataleptic signs and the hypertonicity may advance to a complete decerebrate rigidity picture. The treatment with methylene blue is a comparatively recent method and it will be instructive to observe the results."

By 6 o'clock the patient was mentally clear and answered questions intelligently. Cyanosis had disappeared. He was transferred at this time to the medical ward. Oxygen and carbon dioxide inhalations for five minutes every hour were kept up for twenty-four hours. Atropine sulphate, ⅛₅₀ grain

(0.0004 gm.) was given every fourth hour the day after admission because of the appearance of râles in the chest; this condition cleared up. The patient continued to improve. No ill effects were noted from the use of the methylene blue solution. The neurologic signs entirely disappeared, and the patient was discharged as cured, March 10.

Laboratory studies were as follows: On the day of admission the blood sugar was 0.172 per cent; urea nitrogen, 15 mg. per hundred cubic centimeters; plasma carbon dioxide combining power, 46 volumes per cent; chlorides, 450 mg. Unfortunately, no test for carbon monoxide was done at the time of admission. By the next morning the blood sugar had fallen to 0.1 per cent and the carbon dioxide combining power was 53 volumes per cent. On the third day the blood was shown to be free of carbon monoxide (qualitative test). An electrocardiogram done on the third day showed depression of myocardial function (T waves of low voltage).

It might be of interest to add that about a year ago a patient, with a history very similar to this one at the time of admission, never regained consciousness, developed a picture of decerebrate rigidity (of which moving pictures were taken at the time), and died three days after admission.

York and Tabor roads.

Council on Pharmacy and Chemistry

ANNUAL MEETING OF THE COUNCIL ON PHARMACY AND CHEMISTRY

The Council on Pharmacy and Chemistry of the American Medical Association held its annual meeting at the headquarters building, 535 North Dearborn Street, Chicago, Friday and Saturday, March 31 and April 1, 1933.

Dr. Reid Hunt was reelected chairman of the Council for one year and Dr. Torald Sollmann was reelected vice chairman.

Among the many items discussed during the meeting, the following may be of interest to both physicians and manufacturers:

Mutual Problems of the Council on Pharmacy and Chemistry and the Committee on Foods.—In order to prevent confusion in the action of the Committee on Foods, it is the general policy of that committee to follow the decisions of the Council automatically in cases in which a food product may have therapeutic usefulness. The Council adopted as a general policy the principle that the proprietor of a product which may be both a food and a drug be entitled to the use of only one seal on a package; that in cases in which the firm is entitled to the use of the seals of both the Council and the Committee on Foods, the seal of the Committee on Foods will be the seal recommended, and that if the seal of the Council on Pharmacy and Chemistry is desired, special consideration in each instance must be given by the Council on Pharmacy and Chemistry.

Rule 4.—Special consideration was given to the enforcement of rule 4, wherein it is provided that mention of nonaccepted products may not occur in advertising for Council-accepted products. The question had arisen whether or not packages of nonaccepted products might contain enclosures advertising accepted products. The Council went on record as being opposed to advertisements of accepted products in packages of nonaccepted products. The Council further declared that the inclusion of a name of an accepted product in the advertising of an unacceptable combination or mixture of which the accepted product is one of the components be not considered as constituting an infringement of rule 4, provided the Council acceptance of the accepted product be not indicated in any way in the advertisement or in the announcement; with the further provision that the claims made for the ingredient do not exceed those permitted by the Council for the accepted product.

The Use of the Bayer Cross by the Winthrop Chemical Company.—The Council went on record as objecting to the use of the Bayer Cross by the Winthrop Chemical Company on labels of Council-accepted products, as the use of the Bayer Cross is a means of promoting the advertising of the nonaccepted Bayer Aspirin.

Vitamin Preparations.—One of the Council's referees in charge of vitamin preparations presented the matter of vitamin dosage as it affects vitamins A and D. It was brought out in the discussion that the amount of vitamin A necessary to prevent symptoms of deficiency in man is very small; that the difficulty in experimental work where it is endeavored to obtain a state of A-avitaminosis is to obtain food sufficiently pure that no vitamin A accompanies it; that it requires only a minimal amount of A to prevent or cure night blindness, the first symptom of A deficiency; that in the matter of exploitation of certain vitamin A preparations and carotene preparations the dosage recommended appears to be excessive; that in reference to vitamin D it is known that overdosage may occur. In the case of vitamin A, evidence is not available whether or not there is danger from overdosage; as these vitamins are so potent for good, it is not illogical to assume that they might be potent for harm. It was brought out that there had been cases of carotenemia from an excess of provitamin A (carotene). The referee felt that the use of carotene, which is relatively cheap in price and potent, may lead to decided disadvantages. The Council requested the Secretary to call to the attention of firms marketing carotene the fact that there may be disadvantages in the large doses of carotene which have been recommended.

The Council reaffirmed its opposition to the use of the term "anti-infective" in reference to vitamin A. The Council has required that no advertising submitted to it for vitamin A preparations should be permitted to go beyond the claim that vitamin A is an aid in building up resistance; that mention of specific diseases or implied reference to respiratory diseases by mention of lowered resistance due to wet weather, drafts, etc., is objectionable. The Council's referee pointed out that controlled experiments in a large clinic had afforded no evidence to show that the use of cod liver oil or other vitamin A preparations caused a lower incidence of respiratory diseases. It was brought out that certain experiments with children indicate that properly prepared and controlled irradiated milk is more effective so far as antirachitic action is concerned than cod liver oil or viosterol in equivalent amounts as judged by potency in "rat" units; that the evidence, however, was not sufficient for the Council to take action at this time and the matter was made an item of business for the meeting a year hence.

The Council offered no objection to a variable ratio in the content of vitamins A and D in new commercial products such as halibut liver oil plus viosterol, and similar mixtures of vitamins A and D.

Names for Extracts Containing Vitamins A and D from Different Sources.—Concentrates of various types of vitamin A and D preparations which are coming on the market no longer contain vitamins from one source. One product before the Council contains concentrates of cod liver oil and halibut liver oil, to which has been added viosterol. The naming of such products in an acceptable manner required consideration. The Council voted that in case of tablets and similar preparations of concentrates containing vitamins A and D, firms be permitted to label these products as follows: Vitamins A and D Concentrates; with the understanding that the label should also contain a statement of the source of the vitamins and the units of A and D from each source.

Labeling of Liver Extracts.—The referee in charge of liver extracts emphasized that there was still not available any method of testing accurately the potency of liver extracts. The Council has required that liver extracts should be labeled as equivalent in antianemic potency to so much fresh liver. It was brought out that the objection that could be raised is that livers vary in their potency, such as fat livers and lean livers, and that perhaps horse liver, cow's liver, pig's liver and all the other kinds of liver used may vary in potency. Clinical responses also vary according to the patients.

The Council decided that the policy be continued of requiring firms to label liver extracts with a statement to the effect that a given amount of the product is equivalent in antianemic potency to that of a certain amount of fresh liver; and that all extracts at the time of submission be accompanied by protocols showing comparative antianemic efficiency.

Rationality of Combinations of Iron Salts and Liver Extracts.—The Council maintains its opinion that there is not sufficient evidence to warrant the Council's taking the position that the

administration of liver extract, either by mouth or parenterally, enhances the response to iron therapy. The Council decided that the matter of the rationality of combinations of iron salts and liver extracts be held in abeyance until further evidence of the comparative value of simultaneous administration is forthcoming.

Copper-Iron Compounds.—It was reported that a search of the literature fails to reveal that, in man, the addition of copper to iron is of any therapeutic advantage. After a general discussion, the Council decided that in view of the lack of specific evidence of the value, in man, of combinations of copper and iron, the Council will not for the present accept combinations containing copper and iron.

Copper-Iron Patent.—The Council discussed the copper-iron patent of the Wisconsin Alumni Research Foundation. The Council feels that the issuance of this patent was unfortunate; that the use of the name of a distinguished university whereby there is given or implied scientific approval of a product not demonstrated to be effective is to be deprecated; that the government should not have issued the patent; and that the criticism of the Foundation is that it has patented and collected royalties on a product which in the opinion of the Council is of no originality and no established merit.

Special Names for Lines of Medication.—Several pharmaceutical houses have approached the Council with the idea of permitting proprietary names for a line of medications such as, for instance, Sucrets or Dulcets for certain types of candy medication. It was felt that the same principle should guide the consideration of these lines as in the case of individual articles presented to the Council. The firm which makes an important development in that particular field may have a proprietary name or distinctive brand name, but other firms should conform to a common nonproprietary designation for their respective lines.

Standardization of Antiseptics.—The standardization of antiseptics and disinfectants is in an unsatisfactory state. As the referee pointed out, tests of these substances with cultures in test tubes give no true indication of the effectiveness of the germicide or antiseptic when applied to tissues, when mixed with blood, saliva and exudates and when present in the body after oral administration or injection. The Council at this time is not in position to recommend the establishment or adoption of procedures for the standardization of antiseptics and disinfectants. On the other hand, manufacturers engaged in interstate commerce are required by the federal government to have their antiseptics and disinfectants tested according to the so-called F. D. A. method. The Council voted that the U. S. Food and Drug Administration methods of testing antiseptics and disinfectants, as stated in Circular No. 198, U. S. Department of Agriculture, be adopted by the Council under the same conditions as those relating to the previous adoption of the U. S. Public Health Service method of standardization of antiseptics and disinfectants.

Mouth Washes.—The action of the Council on Dental Therapeutics on mouth washes was discussed. The referee pointed out the pertinence of the remarks appearing in the report of the Council on Dental Therapeutics to the effect that normal persons have not been shown to be in need of oral antiseptics or astringents, and that their continued use may be harmful. He also pointed out that, in gargling, the fluid is not carried beyond the anterior pillars, nor is it effective in killing in appreciable amounts such pathogenic bacteria as may there exist. It was the consensus that the use of an antiseptic as a gargle was of no more value than the use of salt water or plain water; that there was no objection to gargling per se but that there was an objection when the gargling was presumed to be beneficial therapeutically because of antiseptic action; that during the time a so-called antiseptic solution was in the mouth it could exert no action which would have appreciable effect either from a prophylactic or therapeutic standpoint; that such effect as would come from gargling was mechanical and could be derived from any mild lavage either tasteful or distasteful; that while the Council does not believe that antiseptic gargles are effective therapeutically, this would not prevent their being used, if so desired, for cosmetic purposes. It was voted that the Council consider the available data for the antiseptic efficiency of gargles as unsatisfactory and, until acceptable proof

is brought forth, that the Council do not allow claims of therapeutic usefulness or prophylactic action of gargles.

Acceptability of Evidence from Certain Laboratories.—The question was raised of how much confidence the Council should put in the reports made for clients by commercial laboratories. Consideration was given to certain commercial laboratories which do not enjoy the full confidence of the Council. It was decided that reports or other evidence emanating from such laboratories and dealing with articles under consideration by the Council must be confirmed by independent data of an acceptable character. The Council also decided that reports from laboratories must be signed by a reputable, qualified worker who is personally responsible for the report and the recommendations contained therein; if the qualifications of the signer of the report are not known to the Council, the report must contain a statement of such qualifications for the information and guidance of the Council.

New and Nonofficial Remedies.—The Council discussed the matter of extensive revision of New and Nonofficial Remedies, 1934. It was brought out that New and Nonofficial Remedies, 1933, was issued this year three months ahead of the time the previous editions had been issued.

Reports of the Committees.—The Council considered the reports of the Committee on Therapeutic Research, the Committee on Nomenclature, and the Committee on Rules and Procedure. Each reported satisfactory progress.

The work of the Council has increased enormously, particularly during the depression. The vast amount of work that falls on Council members in the consideration of reports was discussed, together with methods whereby this might be lightened.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

PAUL NICHOLAS LEECH, Secretary.

"THIO-ALBIN" NOT ACCEPTABLE FOR N. N. R.

"Thio-Albin," marketed by the Thiophene Laboratories, Inc., Chicago, was stated to be ". . . a thion caseinate, containing about 45 per cent of organic dry residue of thion and 55 per cent of casein." The firm presented no evidence to show that the component "Thion" differs essentially from sulphonated bitumen, N. F., or that, as claimed, "The active constituents of thion are sulfur bodies of heterocyclic nature."

In the advertising submitted by the firm at the time of presentation of "Thio-Albin" to the Council, the product was recommended "in the treatment of Secondary Anemia and of Intestinal Putrefaction" and "Disturbances with Dermatological Manifestations." As evidence for the value of the product, the firm submitted "A Clinical Investigation of the Effects of Thio-Albin upon Patients with Secondary Anemia" directed by C. B. S. Evans, A.B., M.D. This consisted of a study of sixty-nine patients, who were observed in a control period of ten days, after which "Thio-Albin" was administered in doses of 45 grains daily for periods up to three months, with frequent counts of erythrocytes, leukocytes and reticulocytes and the determinations of hemoglobin. With few exceptions, the study shows an increase in erythrocytes and in hemoglobin. The charts of every one of the sixty-nine cases were presented. Forty control cases were studied in a similar way during a period of three months. The average of the red blood cell count and the hemoglobin showed no notable change. The bare figures are rather impressive and, taken alone, would seem to justify the acceptance of "Thio-Albin" were the product otherwise acceptable. The Council's referee stated that he could not refute the statements made by Evans in the study of the sixty-nine cases, but that in the absence of evidence that "Thio-Albin" is essentially different from a sulphoichthyolate-casein preparation the Council could not accept the claim that "Thio-Albin" is an intestinal disinfectant, since such claim has not been recognized for sulphoichthyolate preparations.

"Thio-Albin" is obviously of the ichthyol-casein type, suggestive of "Ichthalbin," which was at one time advertised with claims of therapeutic value for a host of conditions.

The Thiophene Laboratories, Inc., was informed that, in the absence of evidence that "Thio-Albin" is essentially different from a sulphoichthyolate-casein preparation, the Council could not accept the claim that it is an effective intestinal antiseptic, and, further, that the product is unacceptable because the claims made for it are not supported by adequate evidence; because the statement of composition is indefinite in that it does not bring out the relation of "Thion" to sulphonated bitumen, N. F.; and because the proprietary, nondescriptive name "Thio-Albin" cannot be recognized.

When the Council's consideration of "Thio-Albin" was sent to the Thiophene Laboratories, Inc., the firm requested postponement of definite action so that it might obtain further evidence. It was explained to the firm that, in general, the Council postponed action concerning a product which had been found unacceptable if the distributor, in the meantime, discontinued active propaganda. Recently physicians have forwarded to the Council an advertising folder, "THIO-ALBIN For Secondary Anemia," which contains claims objected to in the Council's report.

The firm wrote (February 4) that the name "Thion" had been changed to "Thionon" and submitted a report in favor of the claim that "Thio-Albin" is a chemical compound and not a mixture, together with a report of a chemical examination of the constituent "Thionon" and of "Thio-Albin." After examination of these reports, the A. M. A. Chemical Laboratory reported that "Thionon" appeared to be one of those indefinite borderline substances which, while not strictly complying with the standards for sulphonated bitumen, N. F., yet resembles it in many respects. The Laboratory further pointed out that the name "Thio-Albin" is not an acceptable designation for a mixture or compound of a sulphonated bitumen preparation with casein.

It is difficult to determine what it is now intended to claim therapeutically for "Thio-Albin," for the firm wrote "We shall, in future, confine our claims to the results obtained in the report of Dr. C. B. S. Evans . . . and on further research we are making on secondary anemia." The Council's referee held that the firm has failed to show that "Thionon" differs essentially from sulphonated bitumen, N. F., and that the Council cannot accept any therapeutic claims for the product differing essentially from those that are recognized for the latter substance. It is not sufficient to show that the sulphur present is not in exactly similar forms; but it would be necessary to show that it has essentially different therapeutic actions, including those claimed for the preparation. The claimed effects of "Thio-Albin" in secondary anemia depend in part on its action as an intestinal disinfectant, and that claim cannot be accepted for a sulphoichthyolate-casein preparation. The treatment of anemia presents so many problems that the Council would not be justified in accepting a single clinical report for such inherently improbable claims; more especially since not widely different claims were made for ichthyol and were not found to be supported by acceptable evidence. In the absence of satisfactory evidence that "Thionon" differs essentially from sulphonated bitumen, N. F., the claims made for "Thio-Albin" cannot be accepted.

The Council voted to confirm its former decision that "Thio-Albin" be not accepted because it is marketed with claims that are not supported by acceptable evidence and under a name that is not descriptive of its composition.

When the foregoing report of the Council's consideration of Thio-Albin was sent to the distributor, the latter requested that publication be held in abeyance until such time as further experiments, clinical and chemical, could be completed. The firm stated that it was not the intention to promote actively the sale of Thio-Albin and expressed the hope that it would be able to present the Council evidence which would make the product acceptable. That was in October, 1932. In January, 1933, there was received in the Council's office an advertising booklet featuring Thio-Albin together with a line of "Thio" products of the Thiophene Laboratories, Inc. When informed of this, the firm disclaimed an intentional breach of faith with the Council. The booklet, however, could not be considered as anything but frank advertising propaganda, not only for Thio-Albin but for other unaccepted products. The Council was, in consequence, obliged to authorize publication of this report.

REPORTS OF OFFICERS

NOTE.—At the 1925 session of the Association, the House of Delegates suggested that all reports of officers, committees, etc., and resolutions to be brought before the House, if available, be published in advance of the session so as to permit careful consideration and discussion.—Ed.

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The following report of the Secretary is respectfully submitted:

MEMBERSHIP

On April 1, 1933, the list of members of the Association carried 97,111 names. Because the annual session last year was held in May, the number of members was reported to the House of Delegates as of March 1, 1932, at which time there was an enrolment of 99,470. During the year ended Dec. 31, 1932, the names of 8,877 new members were enrolled, while 9,972 names were removed from the membership list, of which 1,502 were the names of deceased members.

FELLOWSHIP

The number of names on the Fellowship roster on April 1, 1933, was 62,495, as compared with 64,712 reported as of March 1, 1932, at the New Orleans Session. During the year ended Dec. 31, 1932, 3,317 names were added to the Fellowship roster, while 5,259 were removed. These removals were due to the following: deaths, 796; nonpayment of dues, 1,198; resignations, 1,994; ineligibility, 1,271.

Apparently, practically all lapses in Fellowship because of nonpayment of dues and resignations were occasioned by the unfavorable economic situation. Three resignations were offered as "protests" against the policies of the Association, while several Fellows resigned because, as they stated, THE JOURNAL was available to them without payment of Fellowship dues.

On authorization of the Board of Trustees, the names of Fellows who have found themselves unable to make immediate remittance for Fellowship dues have been retained on the roster when they have specifically indicated their intention to remit within a reasonable time.

An accompanying table shows the number of counties in each state and territory, the number of component county medical societies in the several states and territories, the number of members in each constituent state medical association at the time the count was made, and the number of Fellows, including Honorary Fellows and commissioned medical officers of government services.

PROPOSED AMENDMENT TO THE CONSTITUTION

At the 1932 annual session, Dr. Southgate Leigh, delegate of the Medical Society of Virginia, submitted to the House of Delegates a proposal that Section 2 of article 5 of the Constitution be amended to provide that presidents of constituent state medical associations shall be ex officio members of the House of Delegates. In accordance with the provisions of article 12 of the Constitution, this proposed amendment will come before the House of Delegates for consideration at the present session and will require a vote of two thirds of the voting members of the House of Delegates for adoption.

FIELD WORK

A much greater number of requests for visits by members of the official bodies of the Association were received during the past year than in any previous year, and a far larger number of such visits were made than ever before in any similar period. The President and President-Elect, individual members of the Board of Trustees and other official bodies, and practically all members of the administrative personnel in the Association offices have appeared on the programs of county and district medical societies and of constituent state medical associations in nearly all parts of the country. In addition, official representatives of the Association have participated in a large number

of conferences called by the officers of component societies and constituent associations.

IN APPRECIATION

As in previous years, the Secretary of the Association has received the most helpful cooperation from the officers of component and constituent societies, from members of the House of Delegates and from the officers and members of various

Organization of Constituent State Associations

	Number of Counties in State	Number of Com- ponent Societies in State	Organization of Constituent State Associations							Number of A.M.A. Fellows in State
			Number of Counties in State Not Organized		Number of Physi- cians in State 12th Ed. A.M.A. Directory	Number of Members of State Associations		Number of A.M.A. Fellows in State		
						Mar. 1, 1932	Apr. 1, 1933			
			1932	1933						
Alabama.....	67	67	..	..	2,207	1,500	1,484	466
Arizona.....	14	12	1	1	494	333	340	215		
Arkansas.....	75	63	9	9	1,977	551	818	360		
California.....	58	39	15	14	10,109	5,077	5,123	3,642		
Colorado.....	63	25	22	25	1,698	1,107	1,064	684		
Connecticut.....	8	8	..	..	2,165	1,411	1,452	935
Delaware.....	3	3	..	..	278	178	193	113
Dist. Columbia...	..	..	..	..	1,827	660	672	540
Florida.....	67	35	19	19	1,762	972	955	530		
Georgia.....	161	97	49	49	2,588	1,843	1,477	618		
Idaho.....	44	11	2	2	383	183	148	101		
Illinois.....	102	93	5	6	11,882	7,304	7,262	4,910		
Indiana.....	92	62	3	2	4,073	2,792	2,603	1,596		
Iowa.....	99	97	..	..	3,125	2,425	2,221	1,350
Kansas.....	105	61	32	32	2,168	1,466	1,392	824		
Kentucky.....	120	115	4	3	2,807	1,821	1,733	718		
Louisiana.....	64	42	20	20	2,076	1,237	1,182	766		
Maine.....	16	15	1	1	989	717	715	380		
Maryland.....	23	22	..	1	2,480	1,462	1,509	850		
Massachusetts.....	14	15	..	..	6,703	4,760	4,814	3,087
Michigan.....	83	54	5	5	5,389	3,507	3,345	2,219		
Minnesota.....	87	25	2	2	3,073	2,251	2,230	1,409		
Mississippi.....	62	21	3	4	1,567	1,010	851	321		
Missouri.....	114	87	16	16	5,640	3,316	2,291	1,833		
Montana.....	56	15	28	27	484	312	307	204		
Nebraska.....	93	49	26	23	1,755	1,143	1,124	695		
Nevada.....	17	5	12	12	131	107	93	60		
New Hampshire.....	10	10	..	..	567	495	483	254
New Jersey.....	21	21	..	..	4,357	2,768	3,014	2,019
New Mexico.....	31	12	19	19	374	215	203	144		
New York.....	62	60	1	1	21,008	12,070	13,036	9,007		
North Carolina.....	100	88	2	2	2,372	1,622	1,538	725		
North Dakota....	53	13	10	10	515	383	376	280		
Ohio.....	88	86	2	2	8,653	5,470	5,336	3,214		
Oklahoma.....	77	64	12	12	2,484	1,612	1,528	722		
Oregon.....	36	23	4	3	1,275	684	680	475		
Pennsylvania.....	67	61	4	5	12,051	7,970	8,024	5,395		
Rhode Island.....	5	6	1	1	844	491	497	379		
South Carolina.....	46	42	1	1	1,292	823	861	346		
South Dakota.....	69	12	12	11	585	303	240	195		
Tennessee.....	95	64	18	20	2,662	1,547	1,463	703		
Texas.....	254	133	64	68	6,475	3,702	3,608	1,910		
Utah.....	29	8	20	20	489	363	341	217		
Vermont.....	14	10	3	3	499	341	342	187		
Virginia.....	100	92	12	12	2,384	1,830	1,811	887		
Washington.....	39	22	15	15	1,020	1,404	1,354	827		
West Virginia.....	55	29	5	5	1,782	1,187	1,134	593		
Wisconsin.....	71	53	1	1	3,104	2,166	2,056	1,414		
Wyoming.....	24	9	13	13	234	148	139	97		
Alaska.....	..	..	..	..	47	22	15	14
Hawaii.....	5	4	1	1	288	187	207	98		
Isthmian Canal Zone, Panama, Guam, Samoa, Virgin Islands...	..	..	..	..	91	131	133	20
Philippine Islands (Provinces).....	56	11	47	45	1,825	399	461	44		
Puerto Rico (Dist.)	7	7	..	..	359	295	314	69
Foreign.....	..	..	..	..	..	..	..	202
Total.....	3,141	2,071	541	543	150,030	99,483	97,111	50,934		
Commissioned Medical Officers and Honorary Fellows.....	2,561									
	62,495									

councils and official groups, as well as from many individual members and Fellows of the Association, to all of whom a very sincere expression of grateful appreciation is now extended.

Respectfully submitted.

OLIN WEST, Secretary.

REPORT OF THE BOARD OF TRUSTEES

To the Members of the House of Delegates of the American Medical Association:

The year 1932 was in some respects an exceedingly trying period. The income of the Association was considerably reduced while the demands that were made on its various departments were even greater than in previous years. In view of the seriousness of the unfavorable economic situation and the possibility of the development of even more unsettled conditions in financial and business affairs, it was deemed advisable to conserve the resources of the Association to the fullest possible advantage and to curtail expenditures as much as could be done without reducing the quality of the Association's publications and without lessening the quality and scope of its service for the benefit of its constituent and component societies and its general membership. In some departments it was not possible to meet growing demands without increasing operating expenses; in other departments the greater demands were met with no larger expenditures or with actual reductions in operating costs.

The reports of the Treasurer and of the Auditors will be found appended to this report. The total income for the year 1932 was \$1,634,848.31, an amount less by \$193,936.61 than in 1931. Total expenditures in 1932 were \$1,541,005.56, which represents a reduction in expenditures of \$58,125.64 as compared with 1931.

The income from dues and subscriptions was less in 1932 by \$61,060.53, and the decrease in advertising income compared with the previous year was \$122,244.56. Unusual expenditures were required for legal services in defense of suits brought against the Association, two of which were finally disposed of during the year. The successful conclusion of the suit of Baker of Muscatine, Iowa, was a triumph for scientific organized medicine. A considerable part of the outlay for legal services was incurred in preparation for defense of suits brought by John R. Brinkley of Kansas, by P. L. Clark of Chicago and by the Ora-Noid Company. Another unusual item of expense is that involved in the maintenance of the biographic records of the Association and in the compilation of material for the Thirtieth Edition of the American Medical Directory, which, under ordinary circumstances, would have been published during the year. Publication was delayed because it seemed evident that it would not be possible to effect sales enough to cover actual publishing costs. It has been necessary, however, to retain a part of the personnel of the Directory Department and to proceed with the compilation of biographic data for everyday use and in order that it may be available when the publication of the Directory is undertaken. The extension of field service necessitated expenditures larger than those of previous years. The loss incurred in the publication of the QUARTERLY CUMULATIVE INDEX MEDICUS was greater in 1932 than in 1931 by about \$14,000, owing to the fact that all the work of preparing the material for the INDEX was done in the Association's offices. The excess of expenditures over income involved in the publication and distribution of the special journals in 1932 was \$32,875.44. The amount expended for first class postage in 1932 was larger by approximately \$3,000 than in the previous year, while the expenditure for second class postage was approximately \$4,000 less, so that there was a slight reduction in expenditures for this purpose. Expenditures for paper in 1932 amounted to \$217,029.59, as compared with \$257,433.05 in 1931. The amount expended for salaries and wages in 1932 was less by the sum of \$12,359.92 than in the preceding year.

The net gain recorded for the year was \$93,842.75, which represents the difference between total income and total expense. Of this amount, the sum of \$74,967.03 was realized as interest on investments. This item, it will be seen, represents the larger part of the net gain, the remainder of which is more than accounted for by the reduced costs of paper. It is apparent that had the subscription price of THE JOURNAL been reduced by as much as \$1 and had the cost of paper been maintained in accordance with the prices stipulated in the Association's contract, the cost of operation for the year would have been greater by several thousand dollars than the income received from all sources.

An earnest effort was made to effect all possible economies short of impairing the quality of the Association's publications and curtailing the service of its councils, bureaus and depart-

ments. This effort will be continued during the current year and to that end the Board of Trustees has reduced all salaries in excess of \$100 a month.

Examination of the reports of the Treasurer and of the Auditor will reveal that at the end of the year the Association had invested in bonds the sum of \$1,895,831.38. An appraisal of the Association's investments on December 15, 1932, showed that at that time the total depreciation had amounted to less than 6 per cent, which is believed to be far less than the amount of depreciation in securities held by most other corporations. About February 15, 1933, there was a general decrease in the market value of practically all bonds. Up to the time when this report was prepared, only two issues of bonds held by the Association had defaulted in payment of interest, and there is good reason to believe that both of these issues will resume interest payments when conditions have become more nearly normal and that the bonds will be redeemed on maturity.

The Journal

In a period when numerous periodicals have succumbed to financial stress, when standards of advertising have been broken down because of financial need, when illustrations have been

TABLE 1.—Approximate Count of Fellows and Subscribers on The Journal Mailing List, Jan. 1, 1933; Also Gain or Loss During 1932

State	Fellows	Subscribers	Totals	Gain for Loss Year for Year
Alabama.....	432	158	590	.. 64
Arizona.....	198	88	286	.. 24
Arkansas.....	337	127	464	.. 60
California.....	3,432	2,132	5,564	.. 120
Colorado.....	646	247	893	.. 52
Connecticut.....	906	522	1,428	.. 10
Delaware.....	105	48	153	5 ..
District of Columbia.....	538	488	1,026	.. 32
Florida.....	520	250	776	.. 8
Georgia.....	606	201	807	.. 61
Idaho.....	93	89	182	.. 3
Illinois.....	4,705	2,278	6,983	.. 312
Indiana.....	1,507	571	2,078	.. 89
Iowa.....	1,247	439	1,686	.. 103
Kansas.....	765	275	1,040	.. 89
Kentucky.....	671	283	954	.. 44
Louisiana.....	688	214	902	0 ..
Maine.....	371	112	483	.. 18
Maryland.....	806	427	1,233	.. 35
..	2,852	1,250	4,102	.. 102
..	2,088	944	3,032	.. 160
..	1,354	522	1,877	.. 92
..	281	95	376	.. 35
Mississippi.....	1,709	787	2,556	.. 107
Missouri.....	169	110	279	.. ..
Montana.....	682	353	1,005	.. 65
Nebraska.....	59	27	86	1 ..
Nevada.....	251	74	325	2 ..
New Hampshire.....	1,942	1,219	3,161	91 ..
New Jersey.....	141	61	202	.. 6
New Mexico.....	8,520	4,743	13,263	10 ..
North Carolina.....	660	275	935	.. 99
North Dakota.....	230	85	315	.. 28
Ohio.....	3,035	1,409	4,464	.. 157
Oklahoma.....	631	202	833	.. 84
Oregon.....	432	247	679	.. 33
Pennsylvania.....	5,224	2,102	7,326	.. 177
Rhode Island.....	352	160	512	10 ..
South Carolina.....	316	154	470	.. 10
South Dakota.....	180	131	311	.. 29
Tennessee.....	640	342	982	.. 41
Texas.....	1,691	732	2,423	.. 25
Utah.....	166	80	266	.. ..
Vermont.....	167	102	269	15 ..
Virginia.....	833	338	1,191	.. 100
Washington.....	750	300	1,050	.. 46
West Virginia.....	550	208	767	.. 47
Wisconsin.....	1,268	687	1,955	.. 23
Wyoming.....	89	51	140	2 ..
U. S. Army.....	..	172	172	.. ..
U. S. Navy.....	..	205	205	.. 45
Alaska.....	14	14	28	.. 1
Canada.....	20	755	775	109 ..
Cuba.....	4	53	57	.. 12
Hawaii.....	87	66	153	2 ..
Mexico.....	10	82	92	.. 25
Panama.....	18	27	45	.. 2
Philippine Islands.....	47	84	131	.. 82
Puerto Rico.....	68	32	100	.. 4
Virgin Islands.....	1	4	5	.. ..
Foreign.....	142	2,153	2,295	.. 250

discontinued or reduced and the numbers of pages greatly diminished to decrease budgets, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has come through with standards unimpaired, giving to its readers even a greater service than in previous years, holding the leading place generally accorded it in all surveys of medical journalism. There has been no decrease in the number of pages of reading matter in a volume.

Moreover, through efficient management, THE JOURNAL has continued to develop sufficient income to carry on the multitudinous activities of the American Medical Association.

The problem of the physician who subscribes to medical publications is to secure the maximum of usefulness with the funds available. As a result of several surveys of medical journalism

TABLE 2.—Physicians Receiving The Journal*

State	Number Receiving Journal	Physicians in State 12th A. M. A. Directory	Approximate Percentage Receiving Journal
Alabama.....	640	2,207	29
Arizona.....	286	494	57
Arkansas.....	464	1,977	25
California.....	5,564	10,109	55
Colorado.....	893	1,898	47
Connecticut.....	1,428	2,165	65
Delaware.....	153	278	51
District of Columbia.....	1,026	1,827	57
Florida.....	776	1,762	45
Georgia.....	897	2,888	31
Idaho.....	182	383	45
Illinois.....	6,983	11,382	61
Indiana.....	2,078	4,073	50
Iowa.....	1,686	3,125	54
Kansas.....	1,040	2,168	49
Kentucky.....	954	2,867	34
Louisiana.....	902	2,076	45
Maine.....	453	689	48
Maryland.....	1,233	2,480	49
Massachusetts.....	4,103	6,505	62
Michigan.....	3,029	5,889	54
Minnesota.....	1,877	3,075	60
Mississippi.....	376	1,567	23
Missouri.....	2,886	5,640	46
Montana.....	279	1,484	56
Nebraska.....	1,005	1,785	56
Nevada.....	56	131	66
New Hampshire.....	325	567	58
New Jersey.....	3,161	4,357	74
New Mexico.....	202	374	51
New York.....	13,263	21,008	63
North Carolina.....	935	2,372	39
North Dakota.....	315	515	62
Ohio.....	4,464	8,633	53
Oklahoma.....	833	2,481	33
Oregon.....	679	1,275	52
Pennsylvania.....	7,326	12,031	61
Rhode Island.....	512	844	64
Tennessee.....	470	1,202	36
Texas.....	311	585	51
Tennessee.....	682	2,002	34
Texas.....	2,423	6,475	37
Utah.....	266	489	55
Vermont.....	289	469	55
Virginia.....	1,191	2,584	48
Washington.....	1,039	1,920	56
West Virginia.....	767	1,782	42
Wisconsin.....	1,955	3,104	63
Wyoming.....	140	234	60

* This table gives the number of physicians (based on the Twelfth Edition of the American Medical Directory) in the United States, the number receiving THE JOURNAL and the approximate percentage in each state. Copies to physicians in the United States Army and the United States Navy are not included.

made by different organizations, Dr. Fielding H. Garrison was able to say that THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is, in respect to quantity and variety of material and illustrations, most reasonable of all in price. During 1932, THE JOURNAL extended its service to readers in several ways.

A series of articles indicating the present status of our knowledge of vitamins attracted world-wide attention. The department of Queries and Minor Notes made available to numerous practitioners in isolated communities consultation with authoritative sources and served as a practical guide to an enormous number of interested readers, who expressed their appreciation of the practicality of this department by individual letters to the editor.

It is now generally recognized that THE JOURNAL is the only medical publication with a complete service in the field of foreign correspondence, an especially important feature at a time when economic conditions affecting the profession abroad are of the greatest interest to American medical readers.

Special issues of THE JOURNAL were published covering hospitals, medical colleges and licensing boards, clinical and radiologic laboratories, and the features of the annual session.

During the year, with the cooperation of the Bureau of Medical Economics, a department was fully developed to provide readers with prompt information concerning new forms of medical practice. Numerous letters from readers indicate the exceedingly valuable nature of this department.

On numerous significant questions in which it was desirable to establish promptly the policy of organized medicine, the

Board of Trustees has made its decision after a complete presentation of the available data, and the policies expressed by THE JOURNAL have been the policies of the organization as defined through the Board. Such action was especially important in relationship to the attitude of THE JOURNAL on the Report of the Committee on the Costs of Medical Care, on the Report of the Commission on Medical Education and on such problems as legislation concerning hospitalization of veterans and the prescription of alcohol by physicians. All of these policies have been adequately expressed in the editorial columns of THE JOURNAL with sufficient promptness to permit physicians throughout the country to express their individual points of view to their representatives in state and national legislative bodies.

The approximate count of Fellows and subscribers carried on the mailing list of THE JOURNAL is shown by states in an appended table in which the gain or loss of Fellows and subscribers in each state is indicated.

A second table shows the number of physicians receiving THE JOURNAL in each state.

The total number of copies of THE JOURNAL printed in 1932 was 4,788,903, and the average number of copies printed weekly during the year was 90,360. The decrease in the number of subscriptions to THE JOURNAL as compared with the previous year was less than 3,000.

The Special Journals

During 1932, the special periodicals of the American Medical Association, now representing eight well established specialties, have maintained the high status of previous years. These periodicals are issued primarily to advance the science of medicine through affording a medium of publication for research in both laboratory and clinic. During 1932, only two of them yielded any profit and that so slight as to be of little comfort in meeting the losses sustained by the others. Nevertheless the total loss is not great, since the most rigid economy has been practiced in publishing these periodicals and the number of forms per issue limited somewhat.

The editorial boards have served devotedly in maintaining these periodicals at the highest possible point. Surveys of medical literature by competent authorities indicate that practically every one of these periodicals is a leader in the field which it serves and that their cost to subscribers is less than that of similar periodicals of comparable quality.

During the year a new editorial board was developed for the ARCHIVES OF INTERNAL MEDICINE. It has established the policy of emphasizing clinical investigation of a high type and of practical value to the internist.

In several instances, research institutions and individual physicians have aided the publication of special articles in the various periodicals devoted to the specialties. The Board of Trustees makes grateful acknowledgment to them and to the members of the editorial boards of the special journals for the efficient service they have rendered and continue to render to the Association, and to the promotion of scientific medicine.

Only two of these journals produced incomes larger than the costs of publication—the ARCHIVES OF OTOLARYNGOLOGY and the AMERICAN JOURNAL OF DISEASES OF CHILDREN. Only one of the special journals recorded an increase in circulation for the year, namely, the ARCHIVES OF NEUROLOGY AND PSYCHIATRY. All other journals of this group showed a decrease in circulation as follows:

Archives of Internal Medicine	277
Archives of Pathology	95
Archives of Surgery	122
American Journal of Diseases of Children.....	385
Archives of Ophthalmology	184
Archives of Otolaryngology	259
Archives of Dermatology and Syphilology.....	70

The total circulation of all special journals on December 31, 1932, was 21,211.

The Quarterly Cumulative Index Medicus

With the beginning of 1932, the cost of publication of the QUARTERLY CUMULATIVE INDEX MEDICUS, including its production, printing and circulation, was borne entirely by the American Medical Association. In accepting full responsibility for the publication of this most valuable contribution to medical bibliography, research and practice, much additional work was

brought into the library. Approximately 600 periodicals that had previously been indexed in the Army Medical Library were taken over by the staff of the American Medical Association. Obviously, this required an expansion, but by reorganization and systematization of the work it became possible to undertake the indexing of the additional publications without greatly enlarging the staff. Thus far, three additional persons, including one indexer of foreign languages, one typist and one messenger, have been required. However, the development of additional publications and the demand for more intensive indexing indicates the possible necessity of one or two additional employees during the coming year.

The value of the INDEX MEDICUS to medical literature and the vast amount of its usefulness were indicated by a considerable demand on the part of numerous librarians for an edition to be published on a special rag paper, which would have more durability. Since this would bring about, additional costs, circular letters were sent to all librarians who subscribe to the INDEX, asking how many would be willing to make an increased appropriation for the purchase of such an edition. Because of the present financial conditions, an insufficient number of librarians expressed themselves as willing to subscribe to a more costly edition, so that this project was not undertaken. However, without additional cost an improvement was made in the quality and durability of the binding.

The total number of periodicals now regularly indexed approximates 1,300, which does not include bulletins of health departments of county medical societies, or similar publications, but only scientific medical periodicals in all the languages of the world containing original contributions to medical literature. The number of copies of the QUARTERLY CUMULATIVE INDEX MEDICUS distributed in 1932 was 2,048, as compared with 2,182 in 1931. The loss incurred through the publication of the INDEX was \$43,435.89.

Hygeia

HYGEIA, the Health Magazine, published by the Association, is now firmly established as the leading periodical in its field. Notwithstanding a severe financial depression, the magazine maintained fairly well its circulation during 1932 and, as indicated by the financial report, yielded a small profit to the Association. This is especially significant, since no other health magazine conducted along sound scientific lines, with a circulation national in scope, has ever had such an enviable, enduring record.

In April, 1933, HYGEIA celebrated its tenth birthday. The Association may well be proud of its record. The periodical was established as an educational publication to serve as a liaison between the medical profession and the public. In the ten years of its life, HYGEIA has proved its ability to meet this obligation. Its pages have been replete with information concerning the prevention of disease. It has created in the minds of many not only respect but admiration for the accomplishments of scientific medicine. It has constantly opposed and exposed quackery. Today it is received in hundreds of schools, where it is used in teaching health and as a basis for projects in science and in writing.

During the year, HYGEIA has developed in accordance with modern typographic art and is considered by leading critics a fine example of the best in modern publication.

It is indeed gratifying to the Board of Trustees to be able to report that the income received through subscriptions to HYGEIA and through the sale of advertising space was greater than production costs by the sum of \$18,768.62.

American Medical Directory

Because of unsettled business conditions it was decided to postpone the publication of the Thirteenth Edition of the American Medical Directory. It seemed apparent that it would be impossible to effect a volume of sales large enough to prevent severe loss. It is hoped that it will be possible to proceed with publication during the current year in order that there shall be no serious break in the provision of the useful information contained in the Directory. It has been necessary to continue with the compilation of the biographic data used in the Directory. The possession of this information has become essential in the everyday work of the Association for its own purposes and for the purposes of constituent associations and component societies and other important organizations.

A Supplement to the Twelfth Edition of the Directory was issued, Nov. 15, 1932, containing 238 pages and listing approximately 8,000 new names and the names of more than 4,000 deceased physicians. Since the Twelfth Edition of the American Medical Directory appeared in May, 1931, 10,623 new names have been recorded by the Biographic Department, together with 36,436 changes of address.

The Library

With the beginning of 1932, the work of the library had expanded so greatly that it was necessary to take over the space formerly occupied by the assembly room and to utilize the N. S. Davis Memorial Room for the employees' circulating library. The additional space thus made available permitted greater facility in the conduct of both the QUARTERLY CUMULATIVE INDEX MEDICUS and the general library services.

The library services here mentioned are of immediate practical value to every physician who subscribes to the work of the Association. The package library service furnished 2,508 packages to physicians throughout the country during 1932, an increase over 1931. These requests come largely from physicians in smaller communities who do not have access to competent medical library service. However, the quality of the material and the promptness with which it is provided also cause many physicians in larger communities where good medical libraries are available to make use of the service of the package library. Thus, numerous requests are received even from physicians in New York, Chicago, Boston and Brooklyn, in which excellent medical libraries are available, because, no doubt, the package library service permits the physician to have available a vast amount of research material in his own workroom or library at home. Letters are being received constantly which indicate emphatically that this service is one of the most important rendered by the Association to the individual physician. It aids him not only in the preparation of manuscripts for reading before county medical societies or for publication in medical periodicals but also in the care of difficult or unusual cases. During the same period, several state medical societies established individual medical package library services, which served, no doubt, to some extent to relieve the burden on the headquarters office.

The package library service is supplemented somewhat by the periodical lending service. During 1932, 7,385 periodicals were sent out on loans. The Association makes available to its members and subscribers not only the periodicals regularly listed and abstracted in THE JOURNAL but also the 1,300 periodicals that are regularly received by the QUARTERLY CUMULATIVE INDEX MEDICUS and indexed in that publication.

The library also answered approximately 3,500 letters requesting bibliographic information that was not provided through the package library service or through the periodical lending division. The circulating library maintained for employees a total circulation of 6,540 books for the year.

As was pointed out previously, the library now occupies practically all available space on the fifth floor of the headquarters office. The space available at present is used to the utmost.

Cooperative Medical Advertising Bureau

The journals of thirty-two constituent state medical associations are now served by the Cooperative Medical Advertising Bureau. The net earnings of the Bureau for 1932 were \$24,346.64, approximately 26 per cent less than in the previous year. Of this amount, the sum of \$9,200 was distributed among the journals represented in the Bureau, this distribution having been made in amounts proportionate to the total amount of advertising business secured for each of the journals. Operating costs of the Bureau amounted to \$15,146.64.

Mailing and Order Department

During 1932, 918,460 pieces of first class mail were sent out from the Association's offices, together with 594,744 pieces of third class mail, making a total of 1,513,204 pieces that were passed through the canceling machine. Approximately 20,000 additional pieces of outgoing mail coming in these two classifications were handled. There was a considerable decrease in the number of pieces of first class mail as compared with the previous year because, in the interest of economy, certain kinds of matter were sent as third class rather than as first class.

mail. In addition to first class mail, 133 tons of mail in other classifications were forwarded during the year.

Orders for miscellaneous publications of the Association were handled to the number of 58,327.

Continuation of Fellowship and Subscription

The By-Laws of the Association provide that a Fellow who, for one year, has failed to pay his annual Fellowship dues shall forfeit his Fellowship thirty days after notice of his delinquency has been mailed to his last known address. The regulations of the Post Office Department require that when a subscriber is in arrears for a period of one year the publication to which he has subscribed shall no longer be sent to him through the mails.

Because of the disastrous effects of the unfavorable economic situation on the incomes of physicians, a comparatively large number in various parts of the country notified the Association that they were not in position to make immediate payment of Fellowship dues and subscription. A ruling was secured from the Post Office authorities to the effect that the Association might continue to send *THE JOURNAL* to those in arrears who would offer a definite promise to pay within a reasonable time. In the opinion of the Board of Trustees, the situation was one that justified at least a temporary disregard for the provisions of the By-Laws, and the names of Fellows who found it impossible to make immediate remittance for Fellowship dues and for subscription to *THE JOURNAL* were continued on the Fellowship roster and *THE JOURNAL* has been sent to them. The Board of Trustees would ask the approval of the House of Delegates for this procedure.

Council on Pharmacy and Chemistry

WILLIAM AUGUST PUCKNER

For twenty-seven years, William August Puckner was the Secretary of the Council on Pharmacy and Chemistry. His service was continuous from the time the Council was organized until the day of his death, which occurred on Oct. 1, 1932. No man ever devoted himself more entirely to his task than did Professor Puckner. His every official act was characterized by fearless championship of scientific truth, scrupulous fairness and absolute devotion to duty.

SECRETARY OF THE COUNCIL

Dr. Paul Nicholas Leech, who has been Director of the Association's Chemical Laboratory since this laboratory was established, was elected to succeed Professor Puckner as Secretary of the Council. Dr. Leech retains the directorship of the Laboratory.

THE WORK OF THE COUNCIL

The work of the Council has proceeded along the well established lines that have been followed heretofore but, because of the constantly increasing knowledge in the fields of chemistry, pharmacology and physiology, and because of the widening scope of the advancement in all fields of scientific medicine, the work of the Council has become more complex and more important year after year. The best manufacturers of therapeutic products have increasingly applied scientific methods in the investigations and experiments preliminary to production and in the processes of manufacture. More and more they are seeking the approval of the Council for their products and are appealing to the Council to pass judgment on proposed new therapeutic agents. The medical profession generally is undoubtedly inquiring more closely into the merits of the materials that are available for therapeutic uses and is inquiring more closely than ever before whether or not the preparations that are offered have been accepted or rejected by the Council on Pharmacy and Chemistry. Because of these facts, there has been a very definite and constant increase in the amount and in the scope of the Council's work during the last several years. This increase was particularly marked in the year 1932, for which reason it became necessary to make additions to the administrative personnel in the Council's offices. The demands made on the time of individual members of the Council have become so great that it has been necessary to provide facilities whereby much of the detail work formerly done by these members can be done in the headquarters office.

PUBLICATIONS OF THE COUNCIL

New and Nonofficial Remedies.—New and Nonofficial Remedies, in which appears the official list of products accepted by the Council, is published annually. This volume contains

descriptions of articles which stand accepted on January 1 of the year of issuance. Descriptions as well as reports on articles rejected are first published in *THE JOURNAL*, so that at any time it is possible for the profession to know the latest decisions of the Council. A supplement to New and Nonofficial Remedies is published twice each year, and at the time of reconsideration each year of the annual quota of accepted products, statements concerning the general classifications under which various products are described are scrutinized and brought up to date with the best current medical knowledge. New and Nonofficial Remedies is thus made a valuable reference book for everyday use by the physician.

Council Reports.—The Council issues three kinds of reports: (a) those presenting a statement of the Council's consideration of a product rejected or omitted from New and Nonofficial Remedies; (b) those giving preliminary statements of the status of products which show promise of being useful but which are not at the time ready for acceptance, and in which it is attempted to outline proper standards for products under consideration and to indicate the evidence needed to establish their usefulness in medicine; (c) those concerned with general questions of current interest to the medical profession.

The Council also issues reports on the consideration of articles that have been submitted by manufacturers and found unacceptable. These reports are always submitted to the manufacturers concerned before publication. Reports on articles that have not been submitted for consideration by the Council and that are not believed to be meritorious or that are thought to be harmful are also published, but these are not submitted to the manufacturers before publication. Reports are also issued on rejected articles, including those omitted from New and Nonofficial Remedies and those which have not borne out the promise of therapeutic usefulness under which they may have been accepted.

During the year, a series of articles on the vitamins, prepared under the auspices of the Council, was published in *THE JOURNAL*, and a booklet entitled "Hospital Practice for Interns," in the preparation of which the Council on Pharmacy and Chemistry collaborated with the Council on Medical Education and Hospitals, was made available for distribution.

Among the noteworthy preliminary reports issued by the Council during the year was that on Thorotrast, a thorium dioxide preparation proposed for intravenous use as a roentgenographic medium. As a result of the investigations made preliminary to the publication of this report, the Council rejected this product for intravenous use and postponed further consideration of its possible usefulness when otherwise administered until further evidence of its safety and effectiveness may become available.

Four special reports were issued by Council during the year, three of which are of exceptional value. These include "Comparative Studies on Mercurochrome," "The Dangers of the Injection of Iodized Oils," and "Sulpharsphenamine: Its Uses and Limitations." In the studies leading to the publication of these reports, the Council had the generous and valuable cooperation of a number of the best qualified practitioners and teachers in various special fields.

Other publications of the Council include *Useful Drugs*, a book designed to meet the demand for a less extensive materia medica and to supply a brief discussion of the actions, usages and doses of a selected list of therapeutic drugs, which has gone through eight editions; the *Epitome of the U. S. Pharmacopeia and National Formulary*, now in its fourth edition, designed to give information needed by the practicing physician concerning the drugs described in the two books of standards from which this publication takes its name, and presenting a brief statement of the actions, uses and dosage of each drug together with an estimate of its therapeutic usefulness; and *Investigations of the Therapeutic Research Committee*, comprising reprints of articles published as a result of investigations supported wholly or in part by funds provided through the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry.

COMMITTEE ON THERAPEUTIC RESEARCH

The Committee on Therapeutic Research is a standing committee of the Council, which attempts to encourage scientific investigations in the field of therapeutics by providing funds for the prosecution of necessary research.

During the year 1932 the Committee made sixteen new grants. A detailed list of these grants together with a list of publications during 1932 and of unexpired grants made before Jan. 1, 1932, will be found in the appendix of this report.

The Chemical Laboratory

The Chemical Laboratory during the past year has been chiefly concerned with the examination of products referred to it by the Council on Pharmacy and Chemistry and by the Bureau of Investigation. Because of the great number of products submitted to the Council and because of the complexity of many of the chemical problems involved, the facilities of the Laboratory were taxed to the fullest extent in meeting demands.

During the year a large number of products referred to the Laboratory by the Council on Pharmacy and Chemistry were examined, and carefully elaborated standards were established. Among these, the more important were a new local anesthetic, certain medicinal dyes, barbitol derivatives, theophylline compounds, and a new synthetic homologue of ephedrine. Bismuth compounds for use in the treatment of syphilis, which have become more complex in character, have required much attention by the Laboratory personnel. The examination of dextrose preparations was continued and, as a result of this work, the quality of the mixture or the statement of composition was changed by the manufacturers of such preparations.

Cooperating with the Bureau of Investigation, a number of nostrums offered for sale to the public were examined during the year and, in some instances, analyses required the development of entirely new methods.

Members of the Laboratory staff published articles in leading scientific periodicals, and the director and other members of the personnel have delivered addresses dealing with medical chemistry before a number of scientific organizations and school and university groups.

Council on Physical Therapy

During the years immediately following the World War, largely as the result of the interest created in some of the methods utilized in military medical service involving physical reconstruction and rehabilitation, there was a large production of machines and apparatus of various kinds which were insistently urged on the profession and the public as being useful in the treatment of many diseases and disabilities. While the more simple and useful measures of massage, heat and exercise appeared to be largely forgotten, there was a widespread resort to the use of "machine therapy." Comparatively few physicians recognized the real value of physical therapy and the need for its application under proper restrictions. A comparatively large number of physicians, not having access to authentic information, purchased machines and apparatus and used them extensively in their practice, hoping to find them useful in the treatment of those conditions for which their application was advertised as beneficial. Machines came into the hands of many unqualified persons and were extensively advertised to the public for self use.

A resolution submitted to the House of Delegates of the American Medical Association in 1925 set forth the apparent need for the creation of some official body that might attempt to bring about a rationalization of physical therapy. This resolution, adopted by the House of Delegates, recommended that a Council on Physical Therapy be established under the direction of the Board of Trustees. The Council was organized in September, 1925.

Gradually, as its knowledge and the scope of its functions have increased, the aims and the purposes of the Council have become threefold: first, to protect the profession and the public from misleading and deceptive advertising in connection with the manufacture and sale of devices for physical therapy; second, to disseminate such reliable information as the Council may possess or acquire and to stimulate instruction designed to aid the practicing physician in the choice and application of sound methods of physical therapy and influence the extension of such instruction in medical schools, and, third, to act in an advisory capacity to the profession and the public in matters pertaining to this particular field of therapy.

Much of the time of the Council has necessarily been devoted to the consideration of physical therapy apparatus, including

that which has been submitted by manufacturers with a view to securing the Council's acceptance and that which is offered for sale without submission. It has, of course, been necessary to examine a large mass of evidence and to determine its scientific value. An earnest effort has been made to make proper evaluation of all material in the nature of evidence that has been submitted to the Council, to safeguard the interest of reputable manufacturers and, at the same time, to protect properly the interests of scientific medicine and of the public.

The Council has been constantly confronted with problems the solution of which has been extremely difficult and with others for which no solution has yet been found. In some instances it has been found necessary to devote months to the investigation of apparatus and of the claims made for it and, in a few instances, these investigations have extended over several years and are still in progress.

During the past year the Council considered and accepted or rejected a larger number of devices than had been finally dealt with in the previous seven years of its existence. Non-acceptance of devices submitted to the Council has usually been due to the fact that scientific investigation has failed to prove the soundness of the claims made for them or that the Council has found that certain objectives claimed for the device or apparatus are fully justified while no reasonable basis can be found for other claims. In some instances, approval of apparatus has been withheld because of the objectionable nature of advertising material used by the manufacturers. In a number of cases the requirements of the Council with respect to the nature of advertising have been met by some manufacturers, while they have not been agreed to by others. It is gratifying that the Council has received cordial cooperation from most of the reputable manufacturers of physical therapy apparatus, and it is believed that this cooperation has been of real value to all concerned and, if properly continued, will result in the solution of a number of important problems which, because of their comparative newness, are now perplexing.

The investigations of the Council have shown that there is much virtue in physical therapy methods when properly applied. This fact should be recognized by the profession and these methods should be utilized when definitely indicated. It is now the opinion of the Council that most of these procedures properly belong in the hands of physicians who are well qualified because of actual experience and a scientific understanding of the principles involved and also because of their scientific knowledge of the pathologic conditions in the treatment of which physical therapy methods are properly used.

During the year the Council completed the preparation and publication of the Handbook of Physical Therapy, in which many valuable and authoritative reports have been brought together. A list of definitions has also been formulated, in the preparation of which the Council has had the cooperation of the American Standards Association. The Council has aided in research and, as a result of information thus secured, the recommendation for a standard of measuring ultraviolet radiation has been placed before the International Congress on Light. Through certain research studies aided by the Council, the antirachitic value of radiations of certain wavelengths has been established. Much consideration has been given to anesthesia apparatus, air conditioning apparatus, oxygen therapy apparatus, respirators, resuscitation apparatus, inhalators and pollen filters. The Council has taken the position that the indications for and the use of electrosurgery will best become known through clinical experience and scientific investigation rather than through high pressure advertising or the operation of so-called clinics under the auspices of manufacturers of electro-surgical machines. Most of these manufacturers have agreed to discontinue the holding of such "clinics."

Cordial cooperative contacts have been established and maintained with various important scientific groups, and the Council is greatly indebted to a number of physicians in various parts of the country who have rendered most valuable assistance in promoting its work.

Bureau of Medical Economics

During 1932, medical economic problems, schemes and studies were projected in many sections of the United States in hitherto unknown numbers. The problems that presented themselves were not all the result of current social and economic conditions but were, in some instances, the culmination of long

standing and gradually developing practices. The schemes, which were promulgated in the guise of cures for certain alleged faults in the administration of medical service, represent a rapid extension of commercialism into the provision of medical services. The studies initiated represent an awakening of the medical profession to the importance of medical economic problems and an endeavor, on the part of some medical societies, to discover the correct diagnosis and the appropriate cure for economic ills, if and where they exist.

The work of the Bureau of Medical Economics has become increasingly diversified in the subjects properly pertaining to its functions. The current questions presented through correspondence have demanded an increasingly greater amount of time and study. Because of these widely varied inquiries it has been impossible to devote a continuous and uninterrupted effort to medical economic research. This situation is in some respects desirable and stimulating, since it constantly presents for consideration new problems and new phases of old problems from all sections of the United States, and it prevents a contraction of vision that might develop were attention directed wholly and continuously to the study of a single subject.

During 1932, research studies were conducted in the following phases of medical economics:

1. Contract practice.
2. Workmen's compensation.
3. Collection methods and agencies.
4. An outline on medical economics for use in medical colleges.
5. Group practice.
6. Group hospitalization.
7. Health and accident insurance practice.

CONTRACT PRACTICE

The study on contract practice, which was initiated shortly after the Bureau was established in March, 1931, has been continued in an effort to discover the variations in type of this practice and the extent to which it exists. The Bureau has a record of more than 430 organizations throughout the United States offering or furnishing medical services on a contract basis. As yet it has been impossible to make a complete estimate of the number of individuals involved in the system itself or the number of persons who receive their medical care under contract coverage. It is known, however, that contract practice is carried on by such organizations in thirty-seven states and in 123 different communities. There are thirty-eight additional organizations for which no state or city address is given, although most of this number are known to maintain contract medical service in several states and in a number of communities in each state in which they operate. The figures given here are not final or complete. It is doubtful whether the total number of contract practice organizations can ever be determined, except by the expenditure of an unwarranted amount of time and money. Even after such an exhaustive survey, the figures would be only momentarily accurate because of the almost continuous launching of new and the abandonment of old contract schemes.

It is believed that the study of contract practice should be continued not so much to accumulate the record of additional numbers of organizations practicing medicine in this way as to keep constantly in touch with changes in methods within the system and the extension of the system into new fields.

GROUP HOSPITALIZATION

Group hospitalization represents a phase of contract practice which is comparatively new and which has shown a most remarkable growth. This type of contract practice or limited health insurance had its inception in a hospital in a Southern city about three years ago. It is known that during the past two years, and chiefly during 1932, at least sixteen different organizations have adopted the contract method of selling hospital service to both individuals and groups.

Group hospitalization plans are now being operated in thirty-five states and the District of Columbia. More than 250 hospitals are either engaged in or are considering furnishing hospital care under some form of contract. This new phase of contract practice has been stimulated by the urgency of the present financial stress and is being vigorously promoted for profit by lay corporations and individuals, who are capitalizing to their own advantage the present hospital situation and the popular appeal for medical care at low rates. This

situation, which utilizes a temporary expedient to profiteer by vending hospital services, demands the immediate and serious consideration of the entire medical profession. A description of group hospitalization and a criticism of its operation appeared in *THE JOURNAL*, Jan. 7, 14 and 21, 1933.

WORKMEN'S COMPENSATION

In following the course of European evolution, through the stages of common-law defense and liability insurance, the American compensation system came to emphasize legal and financial features to the almost total neglect of the medical side. Legislation and administration were determined largely by the conflict and cooperation of insurance companies, employers, social workers and laborers, whose influence in framing the laws was about in the order named.

During the years of formative legislation on liability insurance and workmen's compensation, physicians in the United States showed but little interest in the movement that, within a generation, was to be a dominating influence in the practice of a considerable percentage of them. The laws were concerned almost exclusively with securing the legal right of the injured worker in some sort of financial relief during the period his injury prevented him from working.

Today it is becoming evident that every phase of the administration of compensation rests for its success on the skill of physicians and surgeons. Even the prevention of accidents, it is now gradually being recognized, is dependent more on mental and physical examination, treatment and placement of employees than on mechanical safeguards, shop discipline and "safety first crusades." From the moment the accident occurs, medical care is all decisive. Medical judgment decides the extent of the injury and therefore the amount of the compensation, and the character of the medical care determines to a large extent the period of disability and finally the method and time for rehabilitation. Yet there is only one state in which the law provides for a physician in any official administrative capacity concerned with determining the policy of compensation administration.

The report prepared by this bureau on Medical Relations under Workmen's Compensation was submitted to several individuals qualified by experience to criticize the subject matter and is now ready for distribution.

COLLECTION AGENCIES AND METHODS

In 1931, letters requesting information concerning collection methods and rates were sent to nearly 3,100 collection agencies. No replies were returned from many of these agencies and the information from others indicated that they do not accept medical accounts for collection. At present the Bureau records show 1,080 collection agencies which devote their attention either entirely or in part to the collection of medical accounts. In April, 1932, a report was published in the *A. M. A. BULLETIN* which described several types of collection methods and cautioned the profession to be extremely careful in the selection of agencies to handle their accounts. Especially is it necessary for physicians to exercise caution in signing any collection agency contract. It is known that some collection agency contracts are entirely one-sided and vicious and may extort from the physician more money than it brings in. Furthermore, the methods used are sometimes so unfair, unethical, humiliating and almost illegal that the confidence, good will and respect of patients is destroyed with resulting loss of patients as well as money to the physician.

County medical societies in twenty-nine counties in widely separated sections of the United States have organized their own collection agencies and credit bureaus. The information concerning these medical society owned and operated collection bureaus is not yet complete and therefore a description of their organization, methods and experience must be reported later.

MEDICAL ECONOMICS INSTRUCTION IN MEDICAL COLLEGES

In April, 1932, an inquiry was directed to the deans of medical schools for information concerning the instruction given medical students on the subjects of medical economics, ethics and organization and the relations of the physician to his patients and to the public. Replies were received from sixty-two medical schools, of which thirty-seven had no courses

but were offering occasional lectures, and twenty-five were offering courses of a somewhat more formal nature.

Lectures on medical ethics are given in forty-eight of the sixty-two medical schools reporting. Of the medical schools having no formal courses, instruction on medical economics and organization was provided through occasional lectures in eight, and in sixteen of these schools occasional lectures were given on the relations of the physician with his patients and the public.

In those schools in which more formal instruction was given, fourteen provided lectures on medical economics, eleven had lectures on medical organizations, and fifteen had lectures on the physician's relationship with his patients and the public.

Although instruction on medical ethics and jurisprudence has for some time been accorded a regular place in the curriculum of most medical schools, it seems that, in many medical schools, instruction on medical economics, organization and public relations of physicians has not yet been accorded the place it deserves in the preparation of the medical student for his life work. Before adequate instruction on these subjects can be provided, it is necessary to have available not only an outline embodying the essential facts on the subjects but also instructors who are willing and prepared to present the subjects.

The Bureau of Medical Economics is preparing an outline on medical economics suitable for use in medical schools. It is proposed that at first such an outline be used in only a few medical schools to discover any changes that may be necessary in the subject matter. The use of such an outline should, of course, be an entirely voluntary matter and should not disarrange the basic courses of instruction. This suggestion is made with the firm belief that it is becoming increasingly necessary that persons about to enter the practice of medicine have at least a minimum of information concerning medical economics, ethics, organization and the relationship of the physician to his patients and to the public.

GROUP PRACTICE

Last year a schedule requesting information concerning group practice was sent to the secretaries of county medical societies. This year a second schedule was mailed to secure additional information on this phase of medical practice. These schedules are now being returned daily and will furnish data for a separate report. It is interesting to note, in passing, that 258 secretaries of county medical societies reported the existence of one or more medical groups in their jurisdictions; and of 227 who answered the question as to whether group practice reduces the cost of medical care to the patient, 167 replied in the negative and 60 in the affirmative.

HEALTH AND ACCIDENT INSURANCE PRACTICE

At the annual meeting of the International Claim Association, which closely followed the annual session of the American Medical Association in Philadelphia, a special committee was appointed to study claim proof practice and to work with the Bureau of Medical Economics in suggesting forms and practices mutually satisfactory to the insurance companies.

Mr. Robert K. Metcalf, chairman of the special committee and now vice president of the International Claim Association, circularized 233 insurance companies with membership in the International Claim Association, the Accident and Health Conference and the Bureau of Personal Accident and Health Underwriters.

The first step in the study consisted in assembling all the blanks used for similar claim proofs of these companies. A composite was then made of the questions on each of the sets of forms assembled. It was found that only a few of the questions were asked by all of the companies. In conference with Mr. Metcalf, these tabulations were studied carefully for possible combinations of questions which on some blanks were duplicated and elimination of other questions which had insufficient bearing on the proof of claim to warrant inclusion.

The chief object of this study was to produce a simplified and shortened form which would require a minimum of time and work to fill out and still furnish the insurance companies sufficient information on which to base a settlement. An effort was made to eliminate those questions which refer to the nature and extent of previous illnesses, since such information is not pertinent in most cases and in those instances

in which this information may be necessary it should be made the subject of a special report, for which the insurance company should be willing to pay according to the amount of information or search required. Furthermore, an attempt was made to reduce to the minimum the questions calling for information pertaining to the nature of the accident or injury. To safeguard the physician giving information, it is suggested that the following statement be printed on the blank to be filled in and signed by the claimant: "I hereby authorize any physician who has examined or treated me or who may hereafter examine or treat me on account of the above described injuries or illness to furnish the Company with the information it may require for the equitable settlement of this claim." It is believed that this particular phase of the practice may need further study. It is possible that the physician should be further safeguarded by having a similar signed waiver to retain for his own files.

Several specimen forms of the suggested shortened blanks have been prepared for experimental use in different types of health and accident claims. A few companies have already placed the shortened forms in use experimentally, and a considerable number have signified their desire to cooperate fully in an endeavor to simplify and standardize, at least to some extent, the procedures in claim proof practice. It cannot be expected that all insurance companies will adopt new ideas in this field at once, but at the last meeting of the International Claim Association there was evident a sentiment in favor of standard simplified blanks, of eliminating from the regular claim proof blanks questions which require special time, search and professional opinion but which may not pertain strictly to the present condition, and of shifting from the physician to the claimant and the local claim agent the responsibility of furnishing all information not strictly pertaining to the physician.

It is almost certain that insurance companies will not agree to pay a stipulated fee for filling out a short health and accident claim proof blank. Many, if not most, companies are apparently willing to pay for additional information when necessary to effect a settlement. It would be helpful in effecting a further understanding with insurance companies if an authoritative expression of the American Medical Association might be had on this subject.

BUREAU SCHEDULES ON OTHER PHASES OF MEDICAL ECONOMICS

Bureau schedules on several phases of medical economics have been sent to 1,949 county medical society secretaries. At the time this report was written, 663 secretaries had completed and returned all the schedules sent them and 550 secretaries had completed and returned several but not all of the schedules. This is an evidence of the interest in and splendid cooperation with the work of the Bureau of Medical Economics that has been shown by county medical societies throughout the United States.

FIELD INVESTIGATIONS

The director and his assistant made field investigations on medical economic subjects in thirteen states and the District of Columbia.

SPEAKING ENGAGEMENTS

Speaking engagements were filled in nineteen cities in fifteen states to more than 3,100 physicians, including some laymen.

PUBLICATIONS OF THE BUREAU

During the year, the Bureau of Medical Economics prepared a series of reports and bulletins dealing with various features of its work. Special mention should be given to those dealing with the incomes of physicians, with contract practice, with the collection of fees, with workmen's compensation, and particularly an extensive series dealing with new forms of medical practice. The unsettled economic conditions of the times have caused the launching of schemes in various parts of the country, most of them based on the methods of insurance or of group payment for medical service, these schemes varying in different parts of the country according to the plans of their promoters or to local conditions. The series of articles developed by the Bureau fully elucidates such schemes, giving both favorable and unfavorable aspects from the point of view of medical practice. It is planned to continue this series during the coming year.

OFFICE ROUTINE

During the year the Bureau received and answered an average of 460 letters each month. A large part of this correspondence dealt with three subjects; namely, insurance, contract practice and collection agencies and methods.

LOCAL STUDIES

With the increasing interest in medical economics shown by state and county medical societies in the appointment of medical economics committees, it is probable that many county medical societies will soon endeavor to conduct their own investigations of medical economic problems. It is desirable that county medical societies become thoroughly acquainted with the problems in their own jurisdictions. In order that this bureau may be constantly informed of medical economic conditions throughout the United States, it is hoped that county and state medical societies will furnish it with copies of all studies and recommendations made. It is believed that the results of such investigations might be more easily comparable if certain features of the studies were made in a somewhat uniform manner. It is recognized that the complete study on a given subject in one community might require a more comprehensive form than in another, but at least certain basic information might be collected on uniform blanks.

OTHER INVESTIGATIONS

Complying with instructions of the House of Delegates, the director has recently visited the city of Havana for the purpose of studying the operation of health and insurance societies in that city. A report will be submitted for the House of Delegates.

The Bureau is proceeding with studies on sickness insurance in European countries and will prepare a report as soon as possible.

Bureau of Legal Medicine and Legislation

The Bureau of Legal Medicine and Legislation has been active in affording assistance to state and county medical associations with reference to legislative and legal problems and, within such limits as legal ethics and the resources of the Bureau permitted, to individual Fellows and members, and to subscribers to *THE JOURNAL*, with reference to problems submitted by them. Reciprocally, the several state associations, many county associations and individual Fellows and members have cooperated to a greater extent than ever before in the efforts of the Association to limit national legislation of interest to the medical profession to such as is sound and just and in the best interests of the people at large. To all associations and persons who have cooperated in that manner, the thanks of the Association are due.

FEDERAL LEGISLATIVE ACTIVITIES

The first session of the Seventy-Second Congress continued from Dec. 7, 1931, to July 16, 1932. The second session convened Dec. 5, 1932, and expired March 4, 1933. The Seventy-Third Congress met in special session March 9 and is still in session as this report is being written. A general outline of congressional activities of interest to the medical profession is stated below.

Government Competition in the Practice of Medicine.—The House of Representatives, May 31, 1932, authorized the appointment of a committee to investigate government competition with private enterprise. On behalf of the Association, the director of the Bureau of Legal Medicine and Legislation appeared before the committee and pointed out the extent to which the treatment of veterans for non-service-connected injuries constitutes an unwarranted invasion by the government of the field of medical practice. Similar representations had been made previously by several state medical associations.

World War Veterans' Legislation.—On April 25, 1932, a special committee appointed by the House of Representatives reported a bill to effect economies in the administration of the affairs of the federal government. The bill as reported materially limited the right of veterans to free hospitalization and medical and surgical service for disabilities not arising out of military service. Such limitations, however, were stricken from the bill by the House, which substituted a section providing for a joint congressional committee to investigate the operation of the laws and regulations relating to the relief of

veterans. The bill as thus amended became a law. Your President and the director of the Bureau of Legal Medicine and Legislation appeared before the joint committee on behalf of the Association. The committee has made no report.

On March 20, the President approved a bill passed by the Seventy-Third Congress (H. R. 2820), repealing, with certain exceptions, all public laws granting compensation and medical and hospital treatment to veterans and authorizing the President to provide by regulation certain benefits for veterans. These regulations, promulgated March 31, authorize hospital and domiciliary care and medical services for veterans suffering from service-connected disabilities. A veteran suffering from non-service disabilities can obtain hospital or domiciliary care, at public expense, only in case he served for a period of ninety days or more, is suffering from a permanent disability, or tuberculosis or a neuropsychiatric ailment, which incapacitates him from earning a living, and has no adequate means of support.

Federal Subsidies for State Health Activities.—Since 1916, an appropriation has been made annually for the Public Health Service, for special studies of and demonstration work in rural sanitation, in states willing and able to pay a part of the cost. This annual appropriation has been gradually increased from \$25,000 in the fiscal year 1916 to \$338,000 in the fiscal year 1932. In 1932, proponents of the federal subsidy system made a serious but unsuccessful effort to have the amount increased to \$3,000,000. The bills proposing such an increase, along with other federal subsidy bills, died with the expiration of the Seventy-Second Congress.

Medical Units in the Reserve Officers' Training Corps.—At the session of the House of Delegates last year, a resolution was adopted protesting against a then threatened reduction in the number of medical officers in the Army. Telegrams were sent to the President, the Speaker of the House of Representatives, and the Secretary of War, to make that protest effective. Subsequently the director of your Bureau of Legal Medicine and Legislation appeared before the subcommittee of the Senate Committee on Appropriations having the War Department Appropriation bill for the fiscal year 1933 under consideration and urged that the proposed reduction in the number of officers in the Medical Department be not made and that medical units in the Reserve Officers' Training Corps be continued. The number of officers was continued at its then existing level, but the bill as enacted discontinued the training of physicians, dentists and veterinarians in the Reserve Officers' Training Corps, except those who were members of such corps on May 5, 1932. The War Department appropriation bill for the fiscal year 1934 passed the House containing identical phraseology with respect to the discontinuance of the training of physicians, dentists and veterinarians in the Reserve Officers' Training Corps. The director of your Bureau of Legal Medicine and Legislation again protested against this discrimination and the Senate Committee on Appropriations eliminated the discriminatory provision from the bill. When the bill went to conference, however, the original House provision was reinstated and the bill passed in that form.

Flight Surgeons in the Navy.—Efforts were made by the Bureau of Legal Medicine and Legislation to bring about the discontinuance of the discriminatory legislation that prevented officers in the Bureau of Medicine and Surgery in the Navy Department, assigned to aerial flight duty, from being given the extra pay for such service allowable to officers in other branches of the naval service assigned to similar duty. The Senate committee having in charge the Navy Department bill for 1934 recommended the elimination of the discrimination and the Senate adopted the recommendation of the committee. When the bill went to conference, the reinsertion of the discriminatory provision, in a slightly modified form, was agreed on, and the bill passed as agreed to by the conference.

Medicinal Liquor.—Representatives of the Association appeared before a subcommittee of the House of Representatives Committee on the Judiciary, April 6, 1932, and before a subcommittee of the Senate Committee on the Judiciary on the following day, in support of the legislation proposed on behalf of the Association looking toward the rationalization of the provisions of the National Prohibition Act relating to medicinal liquor. The bill sponsored by the Association passed the House, but Senate action could not be obtained and the bill died.

with the expiration of the Seventy-Second Congress. It was reintroduced in the Seventy-Third Congress, passed the Senate, March 29, and the House, March 30, and was approved by the President, March 31. The act abolishes the arbitrary quantitative limits on the amount of liquor a patient may receive and on the number of prescriptions a physician may write. It provides, however, that "no more liquor shall be prescribed to any person than is necessary to supply his medicinal needs." Under the act, no physician may be called on to file in the Department of Justice or the Department of the Treasury or in any other office of the government any statement of the ailment from which his patient is suffering or to keep his records in such a way as to lead to the disclosure of that ailment, except as may be necessary in the course of the execution and enforcement of the act or in other judicial process. Persons who by misrepresentations induce physicians to prescribe liquor not necessary for medicinal use are liable to fine and imprisonment.

The new law directs the discontinuance, not earlier than Jan. 1, 1934, of the use of official prescription blanks for prescribing liquor. The date when their use is to be discontinued will be announced later. After that date a physician will write prescriptions for liquor on his own prescription blanks, validating them by affixing and canceling special stamps, to be supplied by the Commissioner of Prohibition for that purpose.

While the arbitrary quantitative limits on the amount of liquor that a patient may receive and on the number of prescriptions that a physician may issue were abolished by the recent act, the Attorney General and the Secretary of the Treasury were authorized to prescribe jointly regulations relating to prescriptions for liquor for medicinal purposes and the quantities of spirituous and vinous liquor that may be prescribed for such purposes. Such regulations have been promulgated and are doubtless familiar to all members of the medical profession. They give a broad discretion to the medical profession with respect to prescribing. It remains now for the profession to justify that course, not only in order that the good name of the profession may be upheld but also to avoid the necessity of the modification of the regulations toward more rigid control.

STATE LEGISLATIVE ACTIVITIES

There was relatively little activity among state legislatures in 1932, since the legislatures of only nine states met in regular sessions and no legislature at a special session considered matters of specifically medical interest. The relative inactivity of 1932 has already been fully offset, however, during the current year, when forty-four legislatures have already met in regular sessions and two in special sessions. Some of the most important legislation enacted is described below. The report is only fragmentary with regard to bills enacted in 1933, for some legislatures are at the present writing (April 18) still in session and others have adjourned so recently that full reports of their proceedings are not available.

Practice of the Healing Art.—In Louisiana a bill was enacted defining osteopathy as "the treatment of disease, infirmity, deformity, defect, ailment or injury of a human being, without the use of drugs or medicines, except antiseptics and anodynes, by manipulations applied to the nerve centers, bones, muscles, or ligaments." This is in accord with the pretensions of the osteopathic cult on which it has been built up. More in harmony with present aspirations of practicing osteopaths, however, is the bill enacted in North Dakota, which defines osteopathy as "the art and science of applied therapy as heretofore or hereafter taught by recognized colleges of osteopathy except major surgery." The North Dakota legislation is clearly an attempt on the part of the North Dakota legislature to delegate to "recognized colleges of osteopathy" the right to change the scope of the osteopathic act from time to time, by the simple expedient of changing their curriculums, an attempted delegation of legislative authority obnoxious to the ordinary principles of legislation. In Arizona, chiropractors made a determined effort, by the initiative, to procure all the rights and privileges of nonsectarian practitioners, but fortunately the movement was defeated at the polls. The Arizona legislature, however, enacted a law exempting from the operation of the medical practice act "the practice of religion or treatment by prayer." Basic

science laws were enacted in Arizona and Oregon. In Louisiana and Mississippi, bills levying occupational taxes on physicians were enacted.

Hospitals.—In Rhode Island, a law was passed requiring all hospitals except state institutions and maternity hospitals to be licensed annually by the state public health commissioner. A new Louisiana law makes admissible in evidence certified copies of charts or records of charity hospitals. New Jersey made it a misdemeanor for any person to obtain treatment from any governmental or charitable hospital, free or at reduced rates, through false representations as to financial condition. In Maine, a bill was enacted requiring all hospitals receiving state aid to permit licensed osteopaths to practice therein, in the discretion of their boards of trustees. In North Dakota, the new osteopathic practice act purports to permit osteopaths to practice in all institutions maintained wholly or in part by public funds. In Kentucky, a bill was passed authorizing the board of charities and corrections to employ chiropractors to treat patients in state, charitable and penal institutions.

Medical Liens.—Arkansas, Indiana, Texas and Virginia enacted laws authorizing liens for services to persons injured through the fault or neglect of other persons, on moneys received by the injured persons by reason of their injuries. The Arkansas law authorizes such liens for the services of physicians, nurses and hospitals and is substantially in the form of the model act prepared by the Bureau of Legal Medicine and Legislation, to which reference is made hereafter. The Indiana and Virginia laws authorize such liens only for hospitals. Bills authorizing liens have passed both houses of the legislature in Iowa and Minnesota and at present writing are awaiting action by the governor. In North Dakota, a bill of this character passed both houses of the legislature but was vetoed by the governor.

Narcotic Legislation.—The proposed uniform state narcotic drug act, to which reference is made later, formulated by the National Conference of Commissioners on Uniform State Laws and approved by the American Bar Association, in October, 1932, has been considered by a number of state legislatures. At the present writing it has been enacted, with slight modifications, by Indiana and Nevada. It has passed both houses of the legislature in New York and is awaiting action by the governor. The narcotic act of Rhode Island was extensively amended so as to provide for the voluntary commitment of narcotic drug addicts for not less than one year, the suspension of the licenses of physicians addicted to the use of narcotic drugs, and the revocation of the licenses of physicians and nurses convicted of violating the state or the federal narcotic acts. In Delaware, Louisiana and Oklahoma, laws were passed regulating the production and distribution of preparations and derivatives of the several varieties of cannabis and of "marihuana," a name identified with certain preparations of cannabis. A recently enacted Idaho law limits the possession, sale or distribution of anahalonium, otherwise known as peyote. Maine prohibited the sale or other distribution of barbital, except on the written prescription of a licensed physician, dentist or veterinarian. In Virginia, the law regulating the sale of hypnotic drugs was amended so as to exclude from its operation sulphonal, trional, tetronal and chloral hydrate, thus leaving the law applicable to barbital alone.

Expert Testimony.—In Louisiana a law was passed authorizing the court in any criminal case, when it has reason to believe that the defendant is insane or mentally defective, to appoint two disinterested, qualified experts to examine him and to testify at a hearing as to his mental condition.

Laboratories.—New York enacted a law requiring the annual registration with the state department of health of all laboratories or other places handling or cultivating live pathogenic germs, and regulating the distribution and sale of such germs.

Animal Experimentation.—Although bills prohibiting or limiting animal experimentation were before the legislatures of several states and before Congress, in no case was such a bill enacted.

UNIFORM STATE LAWS

Uniform State Narcotic Drug Act.—There are certain obvious advantages in uniformity of state legislation, when that uniformity is based on adequate study and experience. Uniformity facilitates an understanding of the law by the people who must live under it. It promotes efficiency and economy

of administration, by making the experience of every state available to every other state. It tends to diminish litigation, since decisions in one state will be widely followed in other states, even though not of binding authority. In those fields of legislation, therefore, in which there is an adequate background of knowledge and experience, it seems well for the Association to support uniform legislation.

Within the description outlined is the proposed uniform state narcotic drug act, formulated by the Conference of Commissioners on Uniform State Laws. The draft of this law as approved by the conference may be said to have had its origin in the work of a committee authorized by the House of Delegates in 1919. The draft can certainly be said to be, therefore, the product of much study and ripe experience. In preparing the draft, the Conference of Commissioners on Uniform State Laws has had the active cooperation of the Bureau of Legal Medicine and Legislation and has been in touch with representatives of various other professional, commercial and official groups and agencies interested in the subject-matter. It has the approval of the American Bar Association and of the federal Bureau of Narcotics. Although adopted officially only as recently as last October, the model act has been enacted by Indiana and Nevada and has passed both houses of the legislature of New York. A copy of the proposed uniform state narcotic drug act was published in the *AMERICAN MEDICAL ASSOCIATION BULLETIN* in January, 1933. To facilitate consideration, a copy of the draft will be placed in the hands of each delegate.

Efficient state narcotic drug control must supplement federal narcotic drug control, if the abuse of narcotic drugs is to be prevented. The impotence of federal activities with respect to a matter of this character, when they are not supplemented by effective state cooperation, has been forcibly demonstrated by experience under the Eighteenth Amendment and the national prohibition act. The authority assumed by the federal government with respect to the intrastate control of narcotic drugs is based on the federal taxing power. Although the regulations made under the federal narcotic act concerning the intrastate production, manufacture, distribution, and use of narcotic drugs have been very generally affirmed by the courts, they have been affirmed solely because of some supposed relation that the courts have been able to discover between those regulations and the collection of the federal tax. How much further the courts will go in sanctioning such regulations is uncertain. If the efforts of the federal government, under the cover of its taxing authority, to control intrastate matters of this kind be negated by court action, the government, if state control be inadequate, may attempt to take over altogether the production, manufacture, distribution, and use of narcotic drugs in the several states, under its treaty making power. If the federal government should do this, the states would lose their right to authorize practitioners of medicine to prescribe or administer narcotic drugs covered by the act, and the practice of medicine, to the extent that it calls for the professional use of narcotic drugs, would be governed by a Washington bureau. This certainly is a situation that should be avoided if possible, and it can best be avoided by effective state legislation now.

To the plea that a state can save money by shutting its eyes to the prevalence of narcotic addiction and the abuse of narcotic drugs within its borders, and by leaving the entire matter to federal control, the answer is that the saving is only apparent. It costs the federal government as much, and probably even more, to enforce its narcotic laws within a state than it would cost the state to enforce similar laws of its own. The people of the state pay through federal taxes for the enforcement of the federal law, when they might better and more economically, through their state taxes, enforce a state law. Reliance on exclusively federal activities for intrastate protection against the abuse of narcotic drugs is simply the acceptance of a form of federal subsidy and control, with all the inequities and danger inherent in the subsidy system.

For the reasons stated, the Board of Trustees believes the enactment and enforcement of proper narcotic legislation by each of the several states should be urged.

Medical Lien Laws.—In a field quite different from that of the proposed uniform state narcotic drug act is the suggested

medical lien act. The first medical lien act was that passed by Nebraska in 1915. After its enactment, similar acts were adopted by New Jersey, Montana, Oregon, and Delaware. Most of these acts seemed inadequate to accomplish the purposes for which they were intended. The Bureau of Legal Medicine and Legislation, therefore, undertook to prepare a draft of a model medical lien act for the use of such states as might be interested in legislation of this character. Copies of the proposed act have been widely distributed and have generally been favorably commented on. It is necessarily filled with detail, which presumably may have to be modified to meet the needs of individual states. It has already been enacted in Arkansas. It is recommended that the House of Delegates approve the draft of this act prepared by the Bureau of Legal Medicine and Legislation, as a guide for states interested in legislation of this character.

PUBLICATION OF MEDICOLEGAL CASES

Medicolegal Cases: Abstracts of Court Decisions, a volume of approximately 1,300 pages, was published in November, 1932. This book contains, it is believed, an abstract of every published decision of substantial medicolegal interest rendered by federal and state courts of last resort and by some of the more important intermediate appellate courts, during the five-year period beginning about March, 1925. It comprises all abstracts published in *THE JOURNAL* during the calendar years 1926-1930, inclusive. To physicians and to the public generally the book is being sold for \$7. It has been made available to the several constituent associations at the cost of publication, \$5, as directed by the House of Delegates.

Bureau of Health and Public Instruction

RETIREMENT OF DR. JOHN M. DODSON

Dr. John M. Dodson, who served the Association for eight years as director of the Bureau of Health and Public Instruction, retired because of ill health on March 1, 1932, and was succeeded as director by Dr. W. W. Bauer.

REORGANIZATION

During the year a rather complete reorganization of office methods was accomplished, including the extension of a source file which will eventually become as complete as possible. This file is in constant use as the source of information used in the routine work of the Bureau. A complete rearrangement of the Question and Answer file has been effected in order that the large amount of correspondence passing through this particular department of the Bureau may be answered promptly and to the best possible advantage.

GENERAL ACTIVITIES

The cooperation of the Bureau with the editorial department of *HYGEIA* has been continued, and several articles have been provided through the Bureau for publication in *HYGEIA*.

Through the Question and Answer department of the Bureau, approximately 300 inquiries a month have been received and answered. There has been a marked change within recent years in the character of inquiries received, in that while formerly many inquiries had to do with cancer, heart disease, nephritis and apoplexy, the number of questions concerning these subjects has become comparatively small. Many inquirers formerly asked for information about the care and feeding of infants, whereas today dietary questions of interest to adults are considerably more numerous than those concerned with infants' care and feeding.

Clippings and reprints from *HYGEIA* have been used extensively in replying to questions submitted, especially those received from students, teachers and members of lay organizations who wish to have information to be used in the preparation of papers for presentation at the meetings of such organizations.

RADIO BROADCASTING

The program of broadcasting over the Columbia System was discontinued in June, 1932. During the year, 121 five minute and 50 fifteen minute radio talks were broadcast, the fifteen minute talks being given over Station WBBM. Some of the talks were adapted from or based on material published in *THE JOURNAL*, *HYGEIA* and other periodicals, while others were prepared by the Bureau. A large number of radio talks delivered in connection with the programs of component county medical societies and constituent state medical associations

were procured by the Bureau with permission for their use, and the radio program of the Association has also been enriched by contributions from other bureaus and councils. Material for 166 radio talks was mimeographed and is now included in the radio library of the Bureau and made available for the use of medical societies.

Information concerning the broadcasting activities of component county medical societies and constituent state medical associations is not complete, but it appears that approximately 140 component and constituent societies have radio programs. Thirteen state medical associations and fifty-one county medical societies asked for and received material suitable for broadcasting during the year. The total number of talks distributed was 4,312, and distribution was made only on specific request. The subjects dealt with covered a wide range, including periodic health examinations, communicable diseases, diet, cancer, mental hygiene, child training, medical history, tuberculosis and many other important questions.

BUREAU PUBLICATIONS

There was a comparatively large decrease in the demand for the pamphlets, leaflets and other publications heretofore distributed by the Bureau in large numbers. This was undoubtedly due to the effects of the general financial depression. Distribution was also curtailed to some extent because of the limitation of production of new publications. A number of leaflets and pamphlets heretofore widely distributed have been discontinued because they have become in part or altogether obsolete. Some of the more important of these publications have been replaced with new pamphlets and leaflets in which the information presented has been brought up to date. An entirely new series of pamphlets dealing with sex questions has been prepared for the Bureau by Dr. Thurman B. Rice, assistant professor of biology at the Indiana University School of Medicine.

COOPERATION WITH OTHER AGENCIES

The director of the Bureau has continued to serve as a member of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association. The activities of this committee have been somewhat curtailed because of a reduction in the funds heretofore available for prosecuting its work. The Committee on Mental Hygiene of the American Medical Association rendered most valuable assistance in the consideration of an important report on mental hygiene that had been submitted to the Joint Committee. An entirely new report which is now being compiled will also be submitted to the Committee on Mental Hygiene. A report on the inspection of school children by nonmedical personnel is now nearing completion, and studies on other important subjects are now in contemplation.

The Bureau has maintained close touch with the Committee for the Protection of Medical Research and has endeavored to render assistance in the prosecution of the work of this important committee. A new edition of the pamphlet entitled "The Dog's Gift to the Relief of Human Suffering" has been issued under the editorship of Dr. Walter B. Cannon and Dr. Cecil K. Drinker. This first appeared in the *New England Journal of Medicine* and was reprinted with the permission of the editor of that journal. This pamphlet, together with the pamphlet entitled "The Ethics of Animal Experimentation," has been distributed as in previous years among the senior students of medical schools whose deans have agreed to make the distribution.

Cordial cooperation has been maintained with the National Congress of Parents and Teachers. The Association, with the approval of the Board of Trustees, has continued its annual donation of physical examination blanks in a number equal to the number of blanks purchased by the National Congress of Parents and Teachers. In general, the relationship between the American Medical Association and the parents and teachers organization appears to have been satisfactory, and distinct progress has been made toward the objectives of the Summer Round-Up; namely, to encourage the performance of preschool examinations by family physicians.

PUBLIC ADDRESSES

The director of the Bureau delivered sixteen public addresses during the year at meetings attended by from 35 to 2,000 per-

sons. The director has also attended important meetings of various official groups concerned with public health and has participated in conferences held under the auspices of professional and lay organizations interested in that field.

Bureau of Investigation

The work of this bureau has continued along the lines heretofore followed and there has been no decrease in the demands for its services. During the year, approximately one thousand direct inquiries were received by mail each month and such information as was available was forwarded to all inquirers. These inquiries came from officers and members of medical societies, from laymen, from the officers of civic organizations, from government officials and from other sources. The Bureau has continued its cooperation with groups organized to combat fraud in advertising and has provided much information for newspapers and magazines that make an effort to keep their advertising columns free from fraudulent and misleading advertising material. Much information has also been furnished to teachers and pupils in schools and colleges concerning "patent medicines" and medical frauds.

The required material for the department of THE JOURNAL under the heading "Bureau of Investigation" has been prepared by the Bureau. Many of the articles that have appeared in THE JOURNAL have been reprinted and have been distributed along with pamphlets, leaflets and other publications which have been supplied by this bureau for many years. The preparation of replies to inquiries and of material for publication in THE JOURNAL has represented much individual investigation by the Bureau's personnel and has involved a large amount of time and care.

During the year, the director of the Bureau delivered thirty addresses in six states, all of them before public audiences.

There has been the usual demand for the various pamphlets on "patent medicines" and quackery prepared and published by the Bureau as well as for the posters and lantern slides, which have been made easily available to county medical societies.

Bureau of Exhibits

THE ANNUAL SCIENTIFIC EXHIBIT

A decided factor in the success of the Scientific Exhibit at the New Orleans session was the interest taken by the sections of the Scientific Assembly under whose auspices exhibits were installed and demonstrated. Twelve sections were represented by official committees, under whose direction exhibits representing the most recent advances in the various special fields of medicine were made. Forty-three of the papers read before the sections of the Scientific Assembly were illustrated in the Scientific Exhibit. An added feature at the New Orleans session was a motion picture program, sponsored by five of the scientific sections, which included more than fifty motion pictures. There were three special exhibits on poliomyelitis, cancer and physical therapy. These exhibits were made possible through the assistance of special committees, whose members made most generous contributions in time and effort. Members of these committees and a number of other splendidly qualified physicians served as demonstrators and the exhibits were thus made to have great educational value.

Because of the diversified nature of material shown and because of the high quality of the exhibits in general, the task of the Committee on Awards was a most difficult one.

The hall in which the Scientific Exhibit was housed at New Orleans was somewhat smaller than usual, so that it was necessary to limit the number of exhibits to 120.

EDUCATIONAL EXHIBITS

More applications for the loan of exhibits of an educational nature were received during 1932 than in any previous year. Many requests for exhibit material could not be complied with because of the cost involved in preparing and transporting the kind of material requested. Unfortunately, because a great many medical meetings are held within a short period in the spring or in the fall, it was not possible to meet all the demands that were made on the Bureau for exhibit material to be used at such meetings.

Forty-three exhibits were lent during the year, seventeen of which were of a strictly scientific nature. Twenty-six of the exhibits were provided for schools, colleges, parent-teacher

associations, health departments and organizations of various kinds. In every instance, these exhibits were shown under the auspices of medical societies or the endorsement of requests for exhibit material was secured from such societies before the exhibits were shown.

EXHIBIT AT CENTURY OF PROGRESS

The Bureau has been engaged in the preparation of exhibits that will be installed in the Hall of Science at the Century of Progress International Exposition, to be held in Chicago during the current year. These exhibits will be mainly historical in character, four general subjects to be emphasized being Progress in Medical Practice, Progress in Medical Care, Progress in Medical Education, and Progress in Health Education.

Committee on Foods

The Committee on Foods is just completing its third year. Its influence, work and accomplishments differ from those of any other food investigative body. The requirements of the Committee are broader than those of food statutes and other food investigative organizations. The activities and influence of the American Medical Association, expressed through the Committee on Foods, together exert a powerful influence for controlling foods and food advertising in the interests of the public.

The Committee was delegated to utilize the influence of the American Medical Association for the promotion of wholesome foods of desired nutritional values, and for the encouragement of truthful and instructive food advertising. This basic conception has guided the Committee in the formulation of its Rules and Regulations, the development of its policies, the rendition of its decisions and the acceptance of foods.

The Committee has used its influence predominantly to support manufacturers who wished authoritative specialized guidance and who were willing voluntarily to follow a leadership which they recognize as scientifically authoritative.

Food advertising apart from the container label is without the jurisdiction of food statutes. There was no organized effective restraining force to discourage false advertising before the creation of the Committee. The most effective control originates with and is exercised by the controlled themselves. The Committee offers a system of self control by which the food industry from within itself will be governed only by established knowledge, the welfare of the industry itself and the consciousness and recognition of public welfare.

The Committee aids food manufacturers who are dedicated to sound business policies by granting the privilege of using the Committee seal on their products, provided their advertising complies with the Committee's requirements. The seal gives authenticity and trustworthiness to accepted advertising not possessed by unaccepted competitive advertising.

ACCOMPLISHMENTS OF THE COMMITTEE

Some of the concrete accomplishments of the Committee during the year follow:

Report of Committee's Actions

Total products accepted.....	876
Products accepted during 1932.....	510
Total products rejected.....	21
Products rejected during 1932.....	16
Total products submitted.....	1,500
Products submitted during 1932.....	631
Published announcements of acceptance during 1932..	252
Withdrawals of acceptance during 1932.....	16

Rules and Regulations.—The fourth revised edition of the Committee's Rules and Regulations has been published; 3,500 copies of these rules were distributed during the year to the food industry, advertising agencies, institutions, physicians and others. No other body or institution has ever issued a set of rules or statements on foods even bearing a resemblance to these rules of the Committee.

Four amendments were made to the rules. The two amendments governing the package label and advertising require that "the common name of a food or a descriptive statement of the identity of its ingredients, arranged in the order of their decreasing proportions by weight in the food, and in easily legible type, must appear in proximity to the trade name on the label and in

advertising if such be deemed in the interest and welfare of the public or physicians, or necessary to avoid improper or unethical merchandising practices"; and that "names of diseases shall not be used on the package label or in advertising addressed to the public except in statements regarding nutritional disorders arising from inadequacy of the diet in nutritional essentials." The first amendment is necessary to prevent deception in statements of identification of foods by giving undue prominence to ingredients present in small proportions, and more than to those present in major proportions; the second is intended to permit the mention of nutritional disorders as differentiated from names of diseases in lay advertising.

The Committee is requiring that foods be designated by their common names or that identifying descriptive statements accompany fanciful or brand names of food articles. Nondescriptive brand names for foods are objectionable because of their misuse; they open the way to grossly deceptive and misleading advertising; they permit the advertiser to make gross exaggerations and false statements without detection by the uninformed public. These fanciful names shroud foods in a cloak of mystery. Astounding properties are attributed to these foods by the advertising artist. A descriptive statement identifying the nature of a food accompanying the trade name on the package and in the advertising does not permit deceptive advertising fiction. This requirement is a powerful influence for truth in advertising.

It is generally recognized that disease names and discussion of diseases in public advertising lead to self medication and grossly deceptive, false and morbid advertising. The government already forbids all such terms and statements on food containers. There are no laws, however, for effectively preventing such advertising apart from food labels. The rule of the Committee does not permit disease names but does permit reference to nutrition. The Committee thereby permits the nutritional instruction of the public but opposes morbid advertising.

Experience is showing that the Rules and Regulations of the Committee are efficiently serving their intended purpose in practice of instructing and familiarizing the industry in the fundamentals of good food advertising. They are serving as a guide in the preparation of new foods for the market, of new food labels and of new advertising.

General Committee Decisions.—The Committee is supplementing its Rules and Regulations by a series of General Committee Decisions, thirty of which have been adopted to date, nineteen being adopted during 1932. These Decisions have been published in booklet form, 3,000 copies having been distributed during the year. The titles of the nineteen Decisions adopted during 1932 were:

- Academic Titles "Doctor" and "M.D." as Integral Parts of Names of Foods.
- Ambiguous and Incorrect Use of the Terms "Adequate" in Food Advertising.
- Analytic Statements on Labels and in Advertising.
- Constipation Statements in Lay Advertising for Roughage Foods and Bran.
- Feeding Formulas for Infants in Lay Advertising.
- Food Advertising Claims with Scientific or Technical Significance.
- Iodized Salt and Goiter an Iodine Deficiency Disease.
- Misleading Vague Claims Such as "Recommended by Physicians, Medical and Health Authorities, Nurses, Dietitians, Hospitals and Sanatoriums" and Equivalent Statements for Specific Foods.
- Questionnaire Advertising.
- "Sleep Inducing" Claims for Specific Foods.
- So-Called Special "Diabetic Foods" or Special Foods for Sugar and Carbohydrate Restricted Diets.
- Superlative and Comparative Claims.
- Uses of Terms "Sterile," "Sterilized" and "Sterilization."
- Vague Mineral Claims.
- Vague Use of Terms "Balanced" or "Scientifically Balanced."
- Vitamin and Mineral Content of Dried Vegetables.
- Vitamin Claims in Food Advertising.
- Vitamin Fortification of Foods.
- Whole Wheat and Graham Foods.

The individual decisions define the Committee's opinion on nutritional and food issues of public import, on specific types of permissible and unpermissible advertising claims and names of foods, and on the proper and improper use of certain terms and phrases; they define the Committee's requirements for the declaration of certain ingredients in specific foods; they define the required nutritional values and composition of certain classes of prepared foods. These decisions exemplify and illustrate the

practical and explicit application of the Rules and Regulations to specific foods, to specific advertising statements and to specific food problems.

These General Committee Decisions are being augmented as the work of the Committee progresses. They give exactness, permanence and continuity to the Committee's judgments and work; they are proposed for the explicit guidance and instruction of the food industry and advertising agencies.

Accepted and Rejected Foods.—The Committee on Foods is accepting foods of local as well as of national distribution. It does not distinguish between small and big manufacturers. Merit and truth are the deciding factors of acceptance and they only are recognized by the Committee.

The acceptance of foods in practically all cases follows more or less drastic changes in the labels and advertising. It is exceptional for a product to be accepted as submitted. In a large proportion of instances the labels and advertising are completely reconstructed. New trade names are adopted for some foods. Manufacturing formulas of foods are being modified to satisfy the Committee's recommendations. The industry appears willing to comply with the requirements. It is worthy of mention that submitted products bearing other seals are often accompanied by the most flagrantly false and deceptive advertising.

Subsequent to considering foods, the Committee gives reasons for its decisions and recommendations, proposes means to meet its requirements, and the Committee's office discusses the Committee's findings and recommendations with the manufacturers that they may thoroughly understand the Committee's requirements and act intelligently and properly thereon. This is part of the Committee's constructive and educational program. This procedure establishes confidence in the Committee and gains the sympathetic support and good will of manufacturers.

Frequently manufacturers address letters of appreciation to the Committee after they have been put to the trouble and expense of altering labels and discarding advertising; they often acknowledge that the revised new labels and advertising, in addition to being correct and more appropriate, are improvements over the old labels and advertising for sales reasons.

The Committee, an Adviser and Counselor, and a Clearing House on Food Subjects.—The office of the Committee, apart from its regular work of transacting Committee business, is being called on constantly for counsel on matters and problems pertaining to food manufacture, food advertising, food values and general food and nutritional subjects, many of which are of vital public interest. These requests come from physicians, food manufacturers, advertising agencies, trade organizations, institutions, hospitals, government departments, commercial laboratories, and individuals of every description. Radio talks on the work of the Committee and on good and bad food advertising are broadcast monthly.

Manufacturers planning new foods seek advice on the Committee's views and requirements before investing in expensive research and manufacturing developments. Advertising agencies call for information on possible claims for unsubmitted foods. Physicians, dietitians and nurses ask for information on special food and feeding problems. Four important trade associations are cooperating with the Committee and maintaining their advertising within its requirements. A fifth association is now reconstructing its entire advertising after the first submission was rejected. Some of the state departments of health call for expression of opinion on food problems involving public health.

Journal Announcements of Acceptance and the Book "Accepted Foods."—The Committee publishes announcements of its accepted foods in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. These announcements provide information on their composition, manufacture, chemical analysis, micro-organism content, special food values and vitamin content and include prominent warranted claims. The information of these published statements enables the appraisal of the respective foods and advertising by the industry and by the public. With this publicly available information, incompatible claims become self evident. The announcements are effective and important in the Committee's scheme of self regulation and self control by the industry itself in matters of food advertising and food merchandizing.

The book "Accepted Foods" is an important feature of the developing program of the Committee. It contains a report on all foods accepted or rejected by the Committee, provides information on accepted foods and reasons for the action taken on rejected foods, proposes both to the advertiser and to the public standards for food values and proper advertising, and demonstrates the desirability that such standards be adopted by some competent, unbiased authority. Sooner or later all food claims in advertising and food values will be judged by these standards. The courage of the Committee in accepting this responsibility and its willingness to accept the immense amount of work that this entails deserve recognition and gratitude from both the public and the medical profession.

Miscellaneous.—During the year the Council on Pharmacy and Chemistry transferred a class of foods known as "medicinal foods" to the Committee. These foods, especially intended for the nutrition of the sick, are considered to fall more appropriately within the scope of the Committee.

At the request of the Committee, the manufacturer of a nationally distributed food removed a nonfood ingredient, soap, from the manufacturing formula. Several manufacturers of iodized salt have increased the iodine content to that required by the Committee. A large manufacturer of apple cider has taken steps to remove toxic arsenic spray material from the apples before they are pressed, to protect the public health.

Resolutions from Constituent State Medical Associations

The following resolution, adopted by the Board of Trustees of the Medical Society of the State of Pennsylvania, has been transmitted to this Board:

WHEREAS, There have been formed important national organizations of physicians, specialists, other than the American Medical Association, and

WHEREAS, Such organizations fundamentally formed for scientific purposes have from time to time publicly expressed opinions concerning the entire practice of medicine, especially in its social and economic relationships, and

WHEREAS, An unusual emphasis on the social and economic position of medical practice has recently been precipitated by the published report of the national committee known as the Committee on the Costs of Medical Care. Be it

Resolved, That, in the interest of the welfare of the public and the maintenance of the most serviceable form of medical practice, the proper representatives of the American Medical Association request other national medical organizations whose qualifications for membership include membership in the American Medical Association to declare publicly their opinions on general social, legislative, and economic relationships of medical practice only through approved channels of the American Medical Association. To this end the Board of Trustees of the Medical Society of the State of Pennsylvania pledges its own efforts and influences to bring about this most desirable point of view in the minds of the members of the Medical Society of the State of Pennsylvania, who are also members or Fellows of the other organizations referred to. They also respectfully request the Board of Trustees of the American Medical Association to bend every effort to accomplish this purpose throughout the Association at the earliest possible moment in order that the same evolutionary progress of medical practice may not be disturbed by social experiments which endanger the health and the welfare of our citizenship, and which have proved a pernicious health influence in other nations.

A similar resolution adopted by the Council of the State Medical Society of Wisconsin has also been submitted.

Employees

The total number of employees engaged in the service of the Association on April 1, 1933, was 474, as compared with 490 on a similar date in the previous year. The number of employees varies from time to time in accordance with immediate requirements in the mechanical departments.

The Board of Trustees acknowledges with genuine pleasure its great appreciation of the faithful, loyal and efficient service of the entire working personnel of the Association.

Respectfully submitted.

A. R. MITCHELL, Chairman.
J. H. WALSH, Secretary.
ARTHUR W. BOOTH.
D. CHESTER BROWN.
ALLEN H. BUNCE.
THOMAS S. CULLEN.
JOSEPH A. PETTIT.
ROCK SLEYSER.
J. H. J. UPHAM.

APPENDIX

GRANTS OF COMMITTEE ON THERAPEUTIC RESEARCH

The following is a list of the investigations conducted with the assistance of grants made by the Committee on Therapeutic Research, reports of which were published during 1932:

1. Sensitization Dermatoses of Nonfungous Nature, Cleveland White and Samuel J. Taub: *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, Feb. 13, 1932.
2. On the Pharmacologic Action of Some New Choline Derivatives in Relation to Their Chemical Constitution, W. F. von Oettingen and D. F. Eveleth: *Journal of Pharmacology and Experimental Therapeutics*, April, 1932.
3. Treatment of Superficial Fungus Infections with the Long Wave-length Roentgen Rays (Grenz Rays): Further Observations, Maurice Dorne and Cleveland White: *Radiology, Journal of the Radiological Society of North America*, April, 1932.
4. Notes on Toxicity and Pharmacology of Indium, W. F. von Oettingen: *Proceedings of the Society for Experimental Biology and Medicine*, June, 1932.
5. Comparative Studies on Mercurochrome and Other Antiseptics, W. F. von Oettingen, O. V. Calhoun, V. A. Badertscher and R. E. Pickett: *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, July 9, 1932.
6. The Tranquillizing Potency of Morphine, Pantopon, Codeine, Papaverine and Narcotine, O. W. Barlow: *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, Sept. 17, 1932.
7. The Preanesthetic Value of Scopolamine and Mixtures of Scopolamine and Morphine in Relation to Nitrous Oxide Anesthesia in the Rat, O. W. Barlow: *Journal of Pharmacology and Experimental Therapeutics*, October, 1932.
8. The Premedication Values of Morphine, Codeine, Papaverine, Narcotine and Pantopon in Relation to Nitrous Oxide Anesthesia, O. W. Barlow and M. F. Stormont: *Journal of Pharmacology and Experimental Therapeutics*, October, 1932.

During 1932 the following grants were made:

- Grant 180: Arnold H. Maloney, head of the department and professor of pharmacology, Howard University School of Medicine, \$200, to investigate picrotoxin-barbiturate antagonism.
- Grant 181: A. J. Carlson, chairman of the department and professor of physiology, and Broda O. Barnes, Department of Physiology, University of Chicago, \$250, to investigate a new method for thyroid assay.
- Grant 182: R. R. Kracke, chairman of the department and associate professor of pathology, Emory University School of Medicine, \$250, to investigate bone marrow stimulation.
- Grant 183: W. F. von Oettingen, assistant professor of pharmacology, Western Reserve University School of Medicine, \$100, to investigate the therapeutic value of indium compounds.
- Grant 184: George R. Cowgill, associate professor of physiological chemistry, Laboratory of Physiological Chemistry, Sterling Hall of Medicine, Yale University, \$250, to investigate peptic secretagogues.
- Grant 185: A. D. Hirschfelder, professor of pharmacology and head of the department, University of Minnesota Medical School, \$250, to investigate the concentration of calcium and of magnesium in the blood in experimental and clinical conditions.
- Grant 186: Department of Pharmacology, Western Reserve University School of Medicine, \$370, to investigate the excretion of metals in syphilis therapy.
- Grant 187: Curtis Bruen, Beth Israel Hospital, \$60, to investigate the therapeutic efficacy of bismuth subnitrate in arterial hypertension.
- Grant 188: Moyer S. Fleisher, professor and director of Department of Bacteriology and Hygiene, St. Louis University School of Medicine, \$250, to investigate serum sickness.
- Grant 189: O. W. Barlow, assistant professor of pharmacology, Western Reserve University School of Medicine, \$300, to investigate the effects of a series of anaesthetics against pentobarbital, tribrom-ethanol ("Avertin") and chloral hydrate.
- Grant 190: John R. Murlin, director and professor of physiology, Department of Vital Economics, University of Rochester School of Medicine, \$200, to investigate the administration of insulin by mouth.
- Grant 191: Robert Gesell, professor of physiology, University of Michigan, \$250, to investigate action potentials involved in the control of respiration.
- Grant 192: Carl J. Wiggers, professor of physiology, Western Reserve University School of Medicine, \$250, to investigate the effect of drugs on the coronary circulation in intact dogs.
- Grant 193: J. P. Quigley, senior instructor in physiology, Western Reserve University School of Medicine, \$150, to investigate gastrointestinal motility.
- Grant 194: Sarah A. Riedman, Columbia University College of Physicians and Surgeons, \$200, to investigate the effect of a high fat or ketogenic diet on the susceptibility of animals to convulsions of experimental origin.
- Grant 195: Eugene U. Still, assistant professor of physiology, University of Chicago, \$250, to investigate the factors controlling pancreatic function.

The following grants were issued before Jan. 1, 1932. In some cases the grant has expired and an unexpended balance remains, or the work is not yet completed or the report has not yet been published:

- Grant 88: M. S. Dooley, professor of pharmacology, Syracuse University College of Medicine, \$75, to aid in the completion of an investigation on a comparison of the results of intramuscular injections in the frog of various preparations of digitalis, with colorimetric assays of the same.

Grant 102: Charles W. Greene, professor of physiology and pharmacology, University of Missouri Department of Physiology, \$250, to investigate the distribution of nitrous oxide and oxygen in the blood during anesthesia.

Grant 119: Nicholas Kopeloff, associate in bacteriology, psychiatric Institute (New York City), \$100, to investigate bacillus acidophilus milk for the prevention and treatment of summer diarrhea in babies.

Grant 143: Cleveland J. White, M.D., 104 South Michigan Avenue, Chicago, \$150, to investigate the local, general and prophylactic aspects of superficial fungus diseases of the skin.

Grant 152: C. W. Greene, professor of physiology and pharmacology, University of Missouri School of Medicine, \$300, to investigate the reaction of the coronary system to drugs.

Grant 158: R. G. Hoskins, M.D., director of research, Worcester State Hospital, \$250, to investigate growth-promoting and sex-stimulating fractions of anterior lobe pituitary extracts on human metabolism.

Grant 164: E. L. Jackson, associate professor of pharmacology, Emory University, \$200, to investigate the antagonism between sodium barbital and insulin.

Grant 165: F. B. Flinn, associate professor of physiology, and Adelaide Ross Smith, associate professor in medicine, Columbia University, \$250, to investigate the effect of viosterol on the elimination of lead after lead poisoning.

Grant 166: Jean Oliver, professor of pathology, Hoagland Laboratory, Long Island College Hospital, \$200, to investigate experimental nephritis in the frog.

Grant 168: N. E. Schreiber, research fellow, Department of Pharmacology, Morley Chemical Laboratory, Western Reserve University, \$250, to investigate the excretion of mercury after oral administration.

Grant 169: C. W. Greene, professor of physiology and pharmacology, University of Missouri School of Medicine, \$250, to investigate the pharmacology of camphor and camphor derivatives.

Grant 170: Moyer S. Fleisher, professor and director of Department of Bacteriology and Hygiene, St. Louis University School of Medicine, \$250, to investigate serum sickness.

Grant 171: Ernest C. Dickson, professor of Department of Public Health and Preventive Hygiene, Stanford University School of Medicine, \$250, to investigate therapeutic procedures against coccidioid granuloma.

Grant 174: Treat B. Johnson, Sterling professor of chemistry, Yale University, \$250, to investigate protein sugar fractions and their antigenic properties.

ADDENDA TO REPORT OF BOARD
OF TRUSTEES

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the year ended Dec. 31, 1932

Reserve Invested as at Dec. 31, 1931.....	\$1,810,991.38	
Bonds Purchased (Cost).....	104,020.00	
	<u>\$1,915,011.38</u>	
Less Bonds Called.....	19,180.00	\$1,895,831.38
Balance for Investment Dec. 31, 1931.....	\$ 8,441.74	
Interest on Investments.....	76,207.24	
Interest on Monthly Bank Balance.....	474.76	
Proceeds on Bond Sales.....	15,000.00	100,123.74

Invested and Uninvested Reserve as at Dec. 31, 1932 \$1,995,955.12

DAVIS MEMORIAL FUND

Balance Fund Dec. 31, 1931.....	\$6,271.16
1932 Interest on Bank Balance.....	189.53

Total Fund as at Dec. 31, 1932 on Deposit..... \$ 6,460.69

AUSTIN A. HAYDEN, Treasurer.

Jan. 12, 1933.

AUDITOR'S REPORT

To Board of Trustees, January 31, 1933.
American Medical Association, Chicago, Illinois.

Dear Sirs:

In accordance with instructions, we have examined the accounts of the American Medical Association, for the year ended December 31, 1932, and have prepared therefrom, and append hereto, the statements undermentioned:

Exhibit "A"—Balance Sheet, as at December 31, 1932.

Exhibit "B"—Income Account, for the year ended December 31, 1932.

Schedules for the year ended December 31, 1932:

Schedule "1"—Journal Operating Expenses.

Schedule "2"—Association and Miscellaneous Expenses.

In our opinion, based on our examination and information furnished to us, the accompanying Balance Sheet and relative Income Account set forth the financial position of the Association as at December 31, 1932, and the results of its operations for the year ended on that date, subject to the following qualifications and observations:

(1) The inventories of Materials, Supplies and Work in Progress in the amount of \$64,635.51, are stated in accordance with affidavits sworn to by responsible officials of the Association and have not been verified by us in any way.

(2) In accordance with the established practice of the Association, no provision has been made for (a) accrued interest on bonds, (b) memberships due and unpaid, (c) accrued salaries and wages, and (d) accrued property taxes for the year 1932.

(3) Depreciation as reflected in the Income Account (detailed in Schedules "1" and "2") has been computed on diminishing values at December 31, 1932, at rates which normally apply to cost of buildings and equipment.

(4) Subscriptions paid in advance represent an estimated amount based on cash received for subscriptions for the year 1933, received in the month of December, 1932. This conforms with the method used in prior years.

(5) Advance payments on publications represent an estimated amount of prepaid subscriptions to *HYGEIA*, \$97,820.66, plus \$24,081.69 received in advance for January advertising and directory service.

As stated in our last two previous reports there are certain lawsuits pending against the Association or against some officer for whose alleged libel the Association is sought to be made liable. One of these lawsuits in which a large amount was claimed as damages was decided in favor of the Association during the year ended December 31, 1932. We have received a certificate from an official of the Association stating that the Association believes the lawsuits still in litigation will be decided favorably to the Association.

Fidelity insurance is carried against the undermentioned officers and employees of the Association in amounts here stated:

Dr. Austin A. Hayden, Treasurer.....	\$10,000.00
Dr. Olin A. West, General Manager.....	10,000.00
E. C. Shelly, Cashier.....	10,000.00
E. A. Hoffman, Assistant Cashier.....	2,000.00
Sundry Employees (nine, \$1,000.00 each).....	9,000.00

Total Fidelity Insurance.....\$41,000.00

We have pleasure in reporting that the books are well maintained and that every facility was afforded us for the proper conduct of the examination.

Yours truly, PEAT, MARWICK, MITCHELL & Co.

STATEMENTS

EXHIBIT "A"

BALANCE SHEET AS AT DECEMBER 31, 1932

ASSETS:

Property and Equipment (at cost, less depreciation):	
Real Estate and Buildings.....	\$ 749,813.48
Machinery.....	135,037.73
Type and Metal.....	13,337.55
Furniture and Equipment.....	51,458.54
Chemical Laboratory.....	3,297.41
Library.....	339.72
Total Property and Equipment.....	\$ 953,284.43
Investments (at cost):	
U. S. Government Securities.....	\$1,000,577.13
Railroad, Municipal and other bonds.....	895,254.25
	1,895,831.38
Cash held by Treasurer for Investment.....	100,123.74
Cash in Banks and on Hand.....	135,666.37
Temporary Investment—Certificate of Deposit.....	100,000.00
Accounts receivable:	
Advertising.....	\$ 90,339.54
Co-operative Medical Advertising Bureau.....	8,728.49
Reprints.....	6,140.49
Miscellaneous.....	6,424.47
	111,632.99
City of Chicago Tax Anticipation Warrants.....	250.00
Note Receivable.....	85.13
Prepaid Insurance, Sundries and Work in Progress.....	64,635.51
..... in Progress.....	37,210.36
....., etc.....	1,986.35
Total.....	\$3,400,706.26

LIABILITIES:

Accounts Payable:	
Co-operative Medical Advertising Bureau.....	\$ 7,100.60
Miscellaneous.....	23,482.72
	\$ 30,583.32
Pershing Hall Medical Memorial.....	2,510.10
Subscriptions Paid in Advance.....	119,844.39
Advance Payments on Publications.....	121,902.35
Net Worth:	
Association Reserve Fund.....	\$ 250,000.00
Building Reserve Fund.....	750,000.00
Capital Account:	
Amount thereof as at December 31, 1931.....	\$2,032,023.35
Net Income for the year ended December 31, 1932.....	93,842.75 2,125,866.10
Net Worth as at December 31, 1932.....	3,125,866.10
Total.....	\$3,400,706.26

EXHIBIT "B"

INCOME ACCOUNT

FOR THE YEAR ENDED DECEMBER 31, 1932

JOURNAL:

Gross Earnings:	
Fellowship Dues and Subscriptions.....	\$ 550,615.06
Advertising.....	860,639.57
Jobbing.....	93,871.02
Reprints.....	3,913.51
Books.....	8,537.80
Insignia.....	5,014.37
Miscellaneous Sales.....	7,836.88
Interest.....	4,181.77
Gross Earnings from Journal.....	\$1,534,609.98
Operating Expenses—Schedule "1".....	929,514.29
Net Earnings from Journal.....	\$ 605,095.69
Miscellaneous Income:	
Rents.....	\$ 1,000.00
Sundry Publications.....	23,466.86
	24,466.86
Association Income:	
Income from Investments.....	\$ 74,967.03
Profit on Sales of Securities.....	80.25
Grand Avenue Property.....	724.19
	75,771.47
Gross Income.....	\$ 705,334.02
Association Expenses—Schedule "2".....	\$ 343,307.45
Miscellaneous Expenses—Schedule "2".....	268,183.82
	611,491.27
Net Income.....	\$ 93,842.75

SCHEDULE "1"

JOURNAL OPERATING EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1932

Wages and Salaries.....	\$ 438,838.59
Editorials, News and Reporting.....	13,033.22
Paper—Journal Stock.....	215,016.84
Paper—Miscellaneous.....	2,012.75
Electrotypes and Engravings.....	19,813.17
Binding.....	599.50
Ink.....	4,438.47
Postage—First Class.....	36,124.95
Postage—Second Class.....	56,383.43
Journal Commissions.....	7,394.31
Collection Commissions.....	1,901.33
Discounts.....	29,693.25
Express and Cartage.....	5,018.07
Exchange.....	3,782.61
Office Supplies.....	2,073.22
Telephone and Telegraph.....	3,072.01
Office Jobbing.....	9,735.92
Power and Light.....	7,201.12
Factory Supplies.....	9,079.25
Repairs and Renewals—Machinery.....	9,601.77
Miscellaneous Operating Expenses.....	20,104.95
Loss on Bad Debts.....	4,037.31
Total JOURNAL Operating Expenses before provision for Depreciation.....	\$ 893,956.09

Depreciation on Equipment (computed on diminishing balances):

Machinery.....	% 10	\$15,004.19
Furniture and Equipment.....	% 20	10,278.38
Factory Equipment.....	% 20	2,586.25
Type.....	% 10	516.00
Metal.....	% 20	2,173.38
		30,558.20

Total Journal Operating Expenses.....\$ 929,514.29

SCHEDULE "2"

ASSOCIATION AND MISCELLANEOUS EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1932

Association Expenses:	
Association.....	\$ 101,927.35
Health and Public Instruction.....	14,615.26
Pharmacy and Chemistry.....	26,876.98
Food Committee.....	10,779.52
Chemical Laboratory.....	24,861.04
Medical Education and Hospitals.....	68,849.82
..... and Field Secretary.....	1,888.46
.....	3,203.04
.....	30,615.38
.....	21,142.17
.....	17,075.67
.....	12,176.45
Bureau of Association Exhibits.....	2,431.25
Sessions 1932.....	6,498.68
Laboratory Depreciation (10% on diminishing balances).....	366.38
Total Association Expenses.....	\$ 343,307.45
Miscellaneous Expenses:	
Insurance and Taxes.....	\$ 27,094.27
Legal and Investigation.....	53,963.98
Building Expenses.....	28,548.08
Building Depreciation (5% on diminishing balances).....	22,320.72
Library Depreciation (10% on diminishing balances).....	37.75
Fuel.....	6,100.90
Sundry Publications.....	130,118.12
Total Miscellaneous Expenses.....	\$ 268,183.82

Report of the Committee on Scientific Research for 1932

During the year, 111 applications for grants have been received. Forty-three awards have been made (grants 230 to 272 inclusive), the total amount awarded being \$15,450. Forty-one applications have been declined, three were withdrawn, and twenty-two are under active consideration. One grant has been relinquished and refunded. The new grants provide support for research in various fields of medical science. In all cases the money has been paid to the financial officer of the institution with which the grantee is connected, the grants being disbursed on requisitions by grantees. Recent reports of the progress of the work and of the disbursements indicate that the work under grants is making satisfactory progress with perhaps one or two exceptions. The results of work under nineteen grants prior to 1932 have been published. The results of work under twenty-three grants prior to 1932 are in the course of publication or of preparation for publication. In the case of twenty-two grants made before 1932, active work is still in progress, but in several instances results of the work have been published. Refunds amounting to \$2,935.25 have been made from eleven grants.

The committee begs leave to recommend that the same appropriation be made for 1933 as for 1932; namely, \$12,550 for grants in aid of medical research and \$1,200 for the expenses of the committee.

Financial statement and list of the grants for 1932 as well as brief accounts of the grants pending at the end of 1931 are given. Respectfully submitted.

COMMITTEE ON SCIENTIFIC RESEARCH OF
THE AMERICAN MEDICAL ASSOCIATION,
JOHN J. MORTON, Rochester, N. Y.
Term expires, 1933.
N. W. JONES, Portland, Ore.
Term expires, 1934.
MARTIN H. FISCHER, Cincinnati.
Term expires, 1935.
LUDVIG HEKTOEN, Chicago, Chairman.
Term expires, 1936.
C. C. BASS, New Orleans.
Term expires, 1937.

GRANTS OF COMMITTEE ON SCIENTIFIC RESEARCH NEW GRANTS

- Grant 230: Alexander S. Wiener, Jewish Hospital of Brooklyn, \$50 for a study of agglutinin N.
- Grant 231: George T. Pack, Memorial Hospital, New York, \$500 to complete an analysis of 300 cases of melanoma.
- Grant 232: Laurence H. Snyder, Ohio State University, \$50 for work on hereditary factors in congenital deafness.
- Grant 233: Detlev W. Bronk, University of Pennsylvania School of Medicine, \$550 for studies on the nervous regulation of the circulation.
- Grant 234: Alfred Friedlander, Cincinnati General Hospital, \$250 for study of temperature variations in different parts of the skin.
- Grant 235: E. A. Smith, Iowa State College, \$100 for study of the effects of illuminating gas and amyl acetate on the rat.
- Grant 236: C. H. Thienes, University of Southern California, \$400 for studies on the relation of the mesenteric nerves to the myenteric ganglions and plexuses.
- Grant 237: Israel S. Kleiner, New York Homeopathic Medical College and Flower Hospital, \$500 to investigate the possible presence of a lactose-splitting or lactose-synthesizing enzyme in mammary tissue.
- Grant 238: Harold E. Himwich, Yale University, \$1,000 to study the relation of the autonomic nervous system to metabolism and effect of alcohol on metabolism.
- Grant 239: Victor C. Jacobsen, Albany Medical College, \$1,000 for a study of transplantable mouse melanoma.
- Grant 240: William D. McNally, Rush Medical College, \$650 for a study of the effect of tobacco tar on the lungs of rats and other animals.
- Grant 241: N. Michels, Jefferson Medical College, \$200 for study of erythropoiesis.
- Grant 242: Ernest Carroll Faust, Tulane University, \$1,000 for a study of strongyloidosis.
- Grant 243: Wilbur A. Selle, University of Texas Medical School, \$250 for work on the relationship between carbohydrate metabolism and the growth rate of experimental tumors.
- Grant 244: Theodore Cornbleet, University of Illinois Medical School, \$250 for study of self sterilization of the skin.
- Grant 245: M. S. Burman, Hospital for Joint Diseases, New York, \$200 for study of the fluorescence of cartilage.
- Grant 246: W. C. Langston and Paul L. Day, University of Arkansas, \$400 for a study of vitamin G deficiency in the monkey, with special reference to cataract.

Grant 247: Wilson D. Langley, University of Buffalo, \$250 for work on the formation of acetone bodies in diabetic animal tissue.

Grant 248: Helen C. Coombs, New York Homeopathic Medical College and Flower Hospital, \$575 for work on the relationships between epilepsy and tetany.

Grant 249: Arthur H. Smith, Yale University, \$350 for a study of the acid-base balance and the osmotic pressure of the blood of stunted albino rats.

Grant 250: S. S. Lichtman, Mount Sinai Hospital, New York, \$400 for work on a method of estimating bile salts in body fluids.

Grant 251: Esther B. Tietz, University of Cincinnati, \$250 for work on so-called pseudopregnancy in rabbits.

Financial Statement for 1932

Balance Jan. 1, 1932.....	\$ 2,700.42
Appropriation for 1932.....	13,750.00
Refund, grant 158.....	640.09
Refund, grant 167.....	60.81
Refund, grant 171.....	290.41
Refund, grant 199.....	29.80
Refund, grant 207.....	11
Refund, grant 211.....	969.89
Refund, grant 212.....	97.50
Refund, grant 213.....	27.14
Refund, grant 228.....	319.50
Refund, grant 257.....	250.00
Refund, grant 258.....	250.00
	\$19,385.67

Grants and Expenses Paid in 1932

Grant 229 (193), Timothy Leary.....	\$ 510.00
Grant 230, Alexander S. Wiener.....	50.00
Grant 231, George T. Pack.....	500.00
Grant 232, Laurence H. Snyder.....	50.00
Grant 233, Detlev W. Bronk.....	550.00
Grant 234, Alfred Friedlander.....	250.00
Grant 235, E. A. Smith.....	100.00
Grant 236, C. H. Thienes.....	400.00
Grant 237, Israel S. Kleiner.....	500.00
Grant 238, Harold E. Himwich.....	1,000.00
Grant 239, Victor C. Jacobsen.....	1,000.00
Grant 240, Wm. D. McNally.....	650.00
Grant 241, N. Michels.....	200.00
Grant 242, E. C. Faust.....	1,000.00
Grant 243, Wilbur A. Selle.....	250.00
Grant 244, Theodore Cornbleet.....	250.00
Grant 245, M. S. Burman.....	200.00
Grant 246, W. C. Langston & P. L. Day.....	400.00
Grant 247, Wilson D. Langley.....	250.00
Grant 248, Helen C. Coombs.....	575.00
Grant 249, Arthur H. Smith.....	350.00
Grant 250, S. S. Lichtman.....	400.00
Grant 251, Esther B. Tietz.....	250.00
Grant 252, Bernhard Steinberg.....	250.00
Grant 253, Willard O. Thompson.....	250.00
Grant 254, J. Lisle Williams.....	200.00
Grant 255, Max Wishnofsky.....	100.00
Grant 256, Allen D. Keller.....	500.00
Grant 257, M. G. Seelig.....	500.00
Grant 258, Jack C. Norris.....	250.00
Grant 259, Daniel A. McGinty.....	150.00
Grant 260, Frank R. Menne.....	150.00
Grant 261, R. S. Cunningham.....	300.00
Grant 262, S. Alexander Hellwig.....	100.00
Grant 263, H. J. Deuel, Jr.....	500.00
Grant 264, Wm. H. Welker.....	200.00
Grant 265, S. W. Ranson.....	400.00
Grant 266, Herbert E. Landes.....	400.00
Grant 267, M. S. Dooley.....	200.00
Grant 268, W. O. Thompson.....	250.00
Grant 269, M. M. Wintrobe.....	250.00
Grant 270, Edwin F. Hirsch.....	500.00
Grant 271, S. S. Lichtman.....	75.00
Grant 272, Joseph L. Donnelly.....	750.00
Clerical expenses.....	600.00
Committee expense.....	411.69
Printing.....	49.71
	\$17,021.40
Balance on hand.....	\$ 2,364.27

Grant 252: Bernhard Steinberg, Toledo Hospital, \$250 for work on protection of the peritoneum against infection.

Grant 253: Willard O. Thompson, Rush Medical College, \$250 for study on the influence of thyroxine on the toxic effects of arsenamine and acetonitrile.

Grant 254: J. Lisle Williams, McCormick Institute, Chicago, \$200 for work on decreased dextrose tolerance in acute infectious diseases.

Grant 255: Max Wishnofsky, Jewish Hospital of Brooklyn, \$100 for work on problems in carbohydrate metabolism.

Grant 256: Allen D. Keller, University of Alabama, \$500 for work on the functions of the brain stem.

Grant 257: M. G. Seelig, Barnard Free Skin and Cancer Hospital, St. Louis, \$500 for work on blood diastase in cancer (\$250 refunded).

Grant 258: Jack C. Norris, Grady Hospital, Atlanta, \$250 for work on relation of intestinal hormone to pellagra (grant relinquished and \$250 refunded).

- Grant 259: Daniel A. McGinty, Emory University, \$150 for study of lactic acid, dextrose and oxygen absorption and carbon dioxide production by heart muscle.
- Grant 260: Frank R. Menne, University of Oregon, \$150 for study of the structural changes in the heart in hyperthyroidism.
- Grant 261: R. S. Cunningham, Vanderbilt University, \$300 for work on the effects of certain colloidal solutions on experimental syphilis.
- Grant 262: C. Alexander Hellwig, St. Francis Hospital, Wichita, \$100 for study of the effect of iodine on the thyroid gland of the white rat.
- Grant 263: H. J. Deuel, Jr., University of Southern California, \$500 for a study of the cause of difference in carbohydrate metabolism between the sexes.
- Grant 264: William H. Welker, University of Illinois, Chicago, \$200 for the preparation and study of hematin in its relation to the benzidine and other tests for blood.
- Grant 265: S. W. Ranson, Northwestern University, Chicago, \$400 for study of structure and function of cutaneous nerves in man.
- Grant 266: Herbert S. Landes, Loyola University, Chicago, \$400 for study of the mechanics of residual urine.
- Grant 267: M. S. Dooley, Syracuse University, \$200 for study of the blood supply of individual heart muscle bundles.
- Grant 268: W. O. Thompson, Rush Medical College, \$250 for study of relation between thyroxine and glutathione oxidation system.
- Grant 269: M. M. Wintrobe, Johns Hopkins Hospital, \$250 for study of vertebrate red corpuscles.
- Grant 270: Edwin F. Hirsch, St. Luke's Hospital, Chicago, \$500 for determination of copper and "active" iron in tissues in infection and toxemia.
- Grant 271: S. S. Lichtman, Mount Sinai Hospital, New York, \$75 to complete methods for estimating bile salts in normal body fluids.
- Grant 272: Joseph L. Donnelly, University of Cincinnati, \$750 for work on the coagulation of biologic materials.

STATE OF WORK UNDER PREVIOUS GRANTS

1. COMPLETED DURING THE YEAR

"Completed" means that the work immediately aided by a grant has been concluded, that account has been made of the expenses, and that results of the work have been published.

- Grant 113, 1927: \$500 to C. W. Apfelbach, Presbyterian Hospital, Chicago, for work on the renal function after glomerular infarction (\$95.09 refunded). Miller, E. M., and Apfelbach, C. W.: Experimental Infarction of the Glomeruli in Dogs, *Arch. Path.* 4: 193, 1927. Jensen, C. R., and Apfelbach, C. W.: Method of Making Repeated Determinations of the Intra-Arterial Systolic Blood Pressure in Dogs, *ibid.* 6: 99, 1928; Blood Pressure in Chronic Renal Insufficiency, *ibid.* 13: 255, 1932.
- Grant 117, 1927: \$250 to Warren C. Hunter, University of Oregon School of Medicine, for study of experimental chronic nephritis. Hunter, Warren C., and Roberts, J. M.: Glomerular Changes Induced by Uranium Nitrate, Mercuric Chloride and Potassium Bichromate, *Am. J. Path.* 8: 665, 1932.
- Grant 123, 1927: \$500 to S. R. Gifford, University of Nebraska School of Medicine, for study of the chemical properties of the normal and the cataractous lens. Gifford, Harold, Jr.: Determination of the Oxidation-Reduction Mechanism in the Lens of Rabbits with Naphthalene Cataract, *Arch. Ophth.* 7: 763, 1932.
- Grant 150, 1929: \$200 to Benjamin Friedman, Knapp Memorial Eye Hospital, New York, for the study of ocular pulsations by graphic methods. Friedman, Benjamin: New Method of Registering Graphically the Ocular Pulse, *Arch. Ophth.* 8: 733, 1932.
- Grant 158, 1929: \$2,000 to G. R. LaRue and A. S. Warthin, University of Michigan, for work on the broad tapeworm in continuation of work under grants 96, 1926, and 131, 1928 (refund \$640.09). Vergeer, Teunis: Causes Underlying Increased Incidence of Broad Tapeworm in Man in North America, *J. A. M. A.* 95: 1579, 1930. The publication is contemplated of a monograph by Teunis Vergeer, entitled "Diphyllobothrium Latum in North America, with Notes on Related Cestoda."
- Grant 171, 1929: \$2,500 to National Research Council, for the study of undulant fever under the auspices of the council's committee on infectious abortion (refund \$290.41). Huddleson, I. F.: Brucellosis: I. Significance of Brucella Agglutinins in the Blood of Veterinarians, *J. A. M. A.* 94: 1905, 1930; Differentiation of the Species of the Genus *Brucella*, *Am. J. Pub. Health* 21: 49, 1931; Diagnosis of Brucella Infection in Animals and in Man by Rapid Macroscopic Agglutination, *Technical Bulletin* 123, 1932, Agricultural Experiment Station, Michigan State College. Johnson, H. W., and Shall, S. B.: Abortion Accompanies Brucella Suis Infection in a Sow, *Quart. Bull. Agric. Exper. Station, Michigan State Coll.* 13: 209, 1931. Johnson, H. W., and Huddleson, I. F.: Natural Brucella Infection in Swine, *J. Am. Vet. M. A.* 78: 849, 1931. Huddleson, I. F., and Johnson, H. W.: Study of Anti-Hog Cholera Serum and Virus for the Presence of Brucella, *ibid.* 79: 635, 1931; Phagocytosis of Brucella, an Index of Immunity to Undulant Fever, *Science* 74: 315, 1931.
- Grant 172, 1930: Detlev W. Bronk, University of Pennsylvania, \$175 for study of the nervous regulation of the heart. Bronk, Detlev W., and Stella, G.: Afferent Impulses in the Carotid Sinus Nerve, *J. Cellulor & Comp. Physiol.* 1: 113, 1932; *Proc. Soc. Exper. Biol. & Med.* 29: 443, 1932.
- Grant 176, 1930: Fred J. Wampler, Medical College of Virginia, Richmond, \$1,200 for the study of the lung involvement in human ascariasis (refund, \$174.12). Wampler, Fred J., and Sutton, L. E.: A Study of the Lung Involvement in Human Ascariasis, *Virginia M. Monthly* 59: 67, 1932.
- Grant 180, 1930: Stanhope Bayne-Jones, University of Rochester, New York, \$500 for the study of chemotherapy of tuberculois by Georges Knaysi (refund, \$271.30). Knaysi, Georges: The Toxicity of Iodine for the Cells of Mycobacterium Tuberculosis, *J. Infect. Dis.* 50: 255, 1932;

The Use of Iodine and of Certain Iodine Compounds in Experimental Tuberculosis, *ibid.*, p. 261.

- Grant 190, 1930: Theodore Cornbleet, University of Illinois Medical School, Chicago, \$500 for study of effect of carbohydrate metabolism and light on the skin. Kaplan, M. A.: A Simple Method for the Preparation of Hematoporphyrin, *J. Lab. & Clin. Med.* 18: 309, 1932. Cornbleet, Theodore, and Klein, R. L.: Capillary Permeability in Disorders of the Skin, *Arch. Dermot. & Syph.* 26: 21, 1932.
- Grant 191, 1930: G. E. Burget, University of Oregon Medical School, Portland, \$500 for work on the closed intestinal loop. Burget, G. E.; Moore, P., and Lloyd, Robert: The Relative Absorption Rates of Dextrose and Levulose; Is Levulose Converted to Dextrose in the Process of Absorption from the Intestines? *Am. J. Physiol.* 101: 565 and 570, 1932.
- Grant 193, 1930: Harry J. Deuel, Jr., University of Southern California, Los Angeles, \$300 for study of the antiketogenic value of various carbohydrates (refund, \$30.12). Deuel, Harry J., Jr.; Gulick, M., and Butts, J. S.: Relative Antiketogenic Value of Glucose and Galactose, *J. Biol. Chem.* 98: 333, 1932.
- Grant 199, 1931: Israel S. Kleiner, New York Homeopathic Medical College and Flower Hospital, \$500 for work on the crystallization of rennin (refund, \$29.80). Tauber, Henry, and Kleiner, Israel S.: Studies on Crystalline Urease, *J. Gen. Physiol.* 15: 131, 1931. Kleiner, Israel S., and Tauber, Henry: Studies on Rennin, *J. Biol. Chem.* 96: 745 and 755, 1932.
- Grant 206, 1931: David Polowe, Paterson, N. J., and Sydenham Hospital, New York, \$50 for determination of the specific gravity of the blood in the prenatal and postnatal states. Polowe, David: The Specific Gravity of the Blood in Pregnancy and in the Puerperium, *Am. J. Obst. & Gynec.* 23: 843, 1932.
- Grant 208, 1931: I. S. Ravdin, University of Pennsylvania School of Medicine, \$600 for a study of the absorptive function of the gall-bladder. Ravdin, I. S., and associates: Studies of Gallbladder Function, *Am. J. Physiol.* 99: 638, 648 and 656, 1932.
- Grant 212, 1931: Timothy Leary, Office of the Medical Examiner, Boston, \$250 for study of the early lesions of rheumatic endocarditis (refund, \$97.50). Leary, Timothy: Early Lesions of Rheumatic Endocarditis, *Arch. Path.* 13: 1, 1932.
- Grant 221, 1931: Mary E. Maver, National Institute of Health, Washington, D. C., \$100 toward expenses of publication of results of further work under Grant 144 to I. S. Falk on diphtheria toxin—see report for 1930 (refund, \$32). Maver, Mary E.: Chemistry of Diphtheria Toxin. Production in Synthetic Mediums, *J. Infect. Dis.* 49: 1, 1931; Attenuation of the Diphtheria Bacillus in Synthetic Mediums, *ibid.* 49: 9, 1931.
- Grant 228, 1931: \$500 to Herbert U. Williams, University of Buffalo, for illustrations in a review of precolumbian bone syphilis (refund, \$329.50). Williams, Herbert U.: The Origin and Antiquity of Syphilis: The Evidence from Diseased Bones, *Arch. Path.* 13: 779, 1932.

2. INCOMPLETE

A. Work under the grant completed, account rendered of expenses, but results not published fully:

- Grant 107, 1927: \$500 to H. L. Huber, Chicago, for work on the chemical and immunologic properties of the pollens of hay fever and allied conditions. Huber, H. L.: Critical Analysis of Information Obtained from Hay Fever Sufferers, *J. Allergy* 2: 48, 1930. Huber, H. L., and Harsh, G. F.: A Summer Dermatitis Caused by a Common Weed, *ibid.* 3: 578, 1932.
- Grant 118, 1927: \$1,000 to Edward Reynolds and E. A. Hooton, Harvard University, for study of the mechanism of erect posture.
- Grant 167, 1929: \$500 to Hans Jensen, Johns Hopkins University, for aid in the chemical and physiologic study of toad poisons (refund, \$60.81). Jensen, Hans, and Chen, K. K.: Chemical Studies on Toad Poisons, *J. Biol. Chem.* 87: 741 and 755, 1930. Jensen, Hans: *Science* 75: 53, 1932.
- Grant 181, 1930: Erwin Brand, New York State Psychiatric Institute and Hospital, \$700 for research in cystinuria (refund, \$366.67).
- Grant 182, 1930: Icie G. Macy, Merrill-Palmer School, Detroit, \$500 for a study of vitamins A and B in human breast milk. Donelson, Eva, and Macy, Icie G.: Human Milk Studies, *Am. J. Physiol.* 100: 420, 1932.
- Grant 184, 1930: Herbert F. Thurston, Indiana University, Indianapolis, \$300 for study of the suturing of blood vessels.
- Grant 189, 1930: Ralph H. Major, University of Kansas, Lawrence, \$500 for study of depressor substances in the brain, liver and pancreas.
- Grant 177 and 192, 1930: W. T. Dawson, University of Texas School of Medicine, Galveston, \$250 for chemical and physiologic study of alkaloids of the cinchona series. Dawson, W. T., and Newman, S. P.: Acquired Allergic Coryzal Reactions to Quinine But Not to Quinidine or Quinine, *J. A. M. A.* 97: 930, 1931. Sanders, J. P., and Dawson, W. T.: Efficacy of Quinidine in Malaria, *J. A. M. A.* 99: 1773, 1932. Bevil, H. G.: Hydroquinidine in Malaria, *Am. J. Trop. Med.* 12: 473, 1932.
- Grant 194, 1930: C. H. Thienes, University of Southern California, Los Angeles, \$500 for study of the relationship between the myenteric plexus and ganglions and the mesenteric nerves. Shulter, Lillian, and Thienes, C. H.: Analysis of the Actions of Cocaine on Excised Smooth Muscles, *Proc. Soc. Exper. Biol. & Med.* 28: 994, 1931. Hendricks, Max D., and Thienes, C. H.: A Pharmacologic Study of the Inhibitory Mesenteric Nerves to the Intestines, *ibid.* 28: 993, 1931.
- Grant 195, 1930: Helen T. Parsons, University of Wisconsin, \$300 for further study of the physiologic effects of high protein diets (see grant 175, 1930, and 227, 1931).
- Grant 196, 1930: Ward W. Summerville, Institute of Pathology, Western Reserve University, \$150 for a study of the effects of anemia of the kidney. Summerville, Ward W.; Hanzal, R. F., and Goldblatt, H.: Urea Clearance in Normal Dogs, *Am. J. Physiol.* 102: 1, 1932.

Grant 200, 1931: C. A. Dragstedt, Northwestern University Medical School, \$250 (Van Zwahlenburg Fund) for a study of experimental appendicitis and related problems.

Grant 203, 1931: W. J. Merle Scott, University of Rochester School of Medicine and Dentistry, \$300 toward a study of the rôle of the suprarenal cortex in pyogenic infections.

Grant 207, 1931: Maurice L. Cohn, National Jewish Hospital, Denver, \$250 for work on the cultivation of the tubercle bacillus (refund, 11 cents).

Grant 210, 1931: Harold E. Himwich, Yale University School of Medicine, \$500 for a study of fat metabolism in diabetes. Himwich, Harold E., and Spiers, M. A.: The Degree of Saturation of Blood Fats Mobilized During Diabetes, *Proc. Soc. Exper. Biol. & Med.* 29: 235, 1931.

Grant 211, 1931: Ward Giltner and I. Forest Huddleson, Michigan State College, \$1,500 for an investigation of Brucella infection in swine and in workers in packing plants (refund, \$969.89).

Grant 213, 1931: Harold G. Grayzel, The Jewish Hospital of Brooklyn, \$500 for a study of experimental amyloidosis.

Grant 216, 1931: W. R. Tweedy, Loyola University School of Medicine, Chicago, \$750 for continuation of work under grants 143 and 146, 1928, on the parathyroid hormone.

Grant 217, 1931: E. B. Hart and C. A. Elvehjem, University of Wisconsin, \$600 toward a study of phosphorus in rachitic and normal blood.

Grant 219, 1931: Norbert Enzer, Mount Sinai Hospital, Milwaukee, \$100 for an investigation of the gases produced by the combustion of x-ray films.

Grant 220, 1931: David Polowc, Paterson, N. J., and Memorial Hospital, New York, \$100 for a study of the specific gravity of the blood in human cancer.

Grant 223, 1931: Géza de Takáts, Northwestern University Medical School, \$600 for aid in studying the effect of celiac ganglionectomy on sugar tolerance.

Grant 227, 1931: Helen T. Parsons, University of Wisconsin, \$300 for a continuation of an investigation of the physiologic effects of egg white in continuation of previous work under grants 175 and 195, 1930.

B. Active work still in progress:

Grant 105, 1927: \$1,800 to H. B. Ward, University of Illinois, for study of life history of broad fish tapeworm endemic in man in northern Minnesota. For history of the grant and previous publication of results of work under it see the report of the committee for 1931. Articles not listed previously: Essex, H. E.: Early Development of *Diphyllobothrium Latum* in Northern Minnesota, *J. Parasitol.* 14: 106, 1927; A New Larval Cestode, Probably *Hymenolepis Cuneata*, a Tapeworm of a Wild Duck, *ibid.* 18: 291, 1932.

Grant 133, 1928: \$715 to F. Lowell Dunn, University of Nebraska, for spectrophotometric analysis of biologic fluids. Dunn, F. Lowell: A Cylindrical Rotating Sector Photometer, *Rev. Scient. Instruments* 2: 807, 1931.

Grant 162, 1929: \$100 to J. P. Simonds, Northwestern University Medical School, for a study of the action of cinchophen and its derivatives on the liver. Churchill, T. P., and Van Wagoner, F. H.: Cinchophen Poisoning, *Proc. Soc. Exper. Biol. & Med.* 28: 581, 1931. Van Wagoner, F. H., and Churchill, T. P.: Production of Gastric and Duodenal Ulcers in Experimental Cinchophen Poisoning, *J. A. M. A.* 99: 1859, 1932.

Grant 163, 1929: \$750 to George Hermann, Tulane University School of Medicine, for the study of problems of the circulation (refund, \$17.80). The work under this grant will be carried on to completion by Roy H. Turner, assistant professor of medicine, Tulane University.

Grant 174, 1930: Alfred R. Ross, College of Medical Evangelists, Loma Linda, Calif., \$1,455 for study of hay fever pollens in the Southwest.

Grant 179, 1930: George T. Pack, Memorial Hospital, New York, \$300 for a study of certain clinicopathologic problems of melanoma. (See grant 231, 1932.)

Grant 183, 1930: Robert W. Hegner, Johns Hopkins University, \$1,500 for study of host-parasite relations in man in continuation of work under previous grants 101 (C. A. Brant Fund) 1926; 125, 1927, and 154, 1929. For list of articles on results of work under this grant, see the report of the committee for 1931. New articles: Fish, F.: Quantitative and Statistical Analyses of Infections with *Eimeria Tenella* in the Chicken, *Am. J. Hyg.* 14: 560, 1931. Stahler, R. M.: An Extended Study of Variations in a Single Race of a Coli-like Amoeba and Its Bearing on the Specificity of Councilman's Lefleuri, *ibid.* 16: 1, 1932. Hegner, Robert W.: Differential Reactions of Species and Strains of Trichomonad Flagellates to Changes in the Environment, *ibid.* 16: 513, 1932. Swezey, W. W.: The Transition of Troglodytella Abrassarti and Troglodytella Abrassarti-Acuminata, Intestinal Ciliates of the Chimpanzee, from One Type to the Other, *J. Parasitol.* 19: 1, 1932.

Grant 187, 1930: A. R. Johnston, University of Cincinnati, \$1,000 for a study of the toxic action of poisonous amines.

Grant 197, 1931: J. J. Morton, University of Rochester School of Medicine and Dentistry, \$250 (Van Zwahlenburg Fund) for a study of the causes of appendicitis.

Grant 198, 1931: Gilbert Dalldorf, Grasslands Hospital, Valhalla, N. Y., \$200 for a study of the human uterus by casts and in other ways.

Grant 201, 1931: J. H. Black, Baylor University College of Medicine, \$100 for study of the relation of certain pollen fractions.

Grant 202, 1931: James T. Case and C. A. Aldrich, Evanston Hospital, Evanston, Ill., \$250 for roentgenologic and clinical study of the thymus.

Grant 204, 1931: Alan M. Chesney, Johns Hopkins Hospital, \$1,000 in aid of work on immunity in syphilis.

Grant 205, 1931: Robert M. Oslund, University of Illinois College of Medicine, \$150 for a histologic study of the bones and teeth as influenced by the anterior lobe of the hypophysis (refund, \$25.20).

Grant 209, 1931: Wilbur A. Selle, University of Texas School of Medicine, \$150 for a study of the carbohydrate metabolism in its relation to the growth of tumors. (See grant 243, 1932.)

Grant 214, 1931: Harry J. Deuel, Jr., University of Southern California School of Medicine, \$600 for work on ketosis. Deuel, Harry J., Jr., and Gulick, Margaret: The Sexual Variation in Starvation Ketosis, *J. Biol. Chem.* 96: 25, 1932.

Grant 215, 1931: Daniel A. McGinty, Emory University, Georgia, \$150 for a study of the absorption of lactic acid, dextrose and oxygen by the heart muscle in continuation of work under grant 185, 1930.

Grant 218, 1931: Clayton J. Lundy, Rush Medical College, Chicago, \$1,000 toward making animated motion pictures of the actions of the heart in health and in disease.

Grant 222, 1931: G. E. Burget, University of Oregon Medical School, \$500 toward investigation of absorption from the closed intestinal loop.

Grant 224, 1931: Owen H. Wangenstein, University of Minnesota, \$600 in aid of a study of intestinal obstruction in continuation of work under grant 188, 1930. Wangenstein, Owen H., and Carlson, H. A.: Histologic Study of Intestine in Simple Obstruction, *Proc. Soc. Exper. Biol. & Med.* 29: 421, 1932. Wangenstein, Owen H., and Scott, H. G.: Length of Life Following Various Types of Strangulation Obstruction in Dogs, *ibid.* 19: 424, 1932; Blood Pressure Changes Correlated with Time, Length and Type of Intestinal Strangulation in Dogs, *ibid.* 29: 428, 1932. Scott, H. G., and Wangenstein, Owen H.: Effect of Intravenous Injections of Peritoneal Fluids from Dogs with Intestinal Strangulation, *ibid.* 29: 559, 1932; Blood Losses in Experimental Intestinal Strangulation, *ibid.* 29: 748, 1932.

Grant 225, 1931: R. S. Cunningham, Vanderbilt University, Nashville, Tenn., \$500 toward a study of the cellular reaction in experimental syphilis with respect to the effects of treatment.

Grant 226, 1931: Warren C. Hunter, University of Oregon Medical School, \$100 for a study of the effect of cinchophen on the liver of the dog.

Grant 229, 1931: Timothy Leary, Office of the Medical Examiner, Boston, \$810 toward a study of the effect of alcohol and insulin on the deposition of cholesterol in the animal body.

REPORT OF THE JUDICIAL COUNCIL

To the Members of the House of Delegates of the American Medical Association:

The Judicial Council has held its usual meeting during the past year. Numerous inquiries concerning ethical principles and questions of organizational law have been received from the officers of medical societies and from individual physicians in all parts of the country. It has been possible to reply to many of these inquiries on the basis of the Council's experience and official actions, while it has been necessary to refer others for the consideration of the Council at a regular official meeting. Some of the questions have dealt with problems which are altogether new or for which no satisfactory solution has yet been found.

Many inquiries directed to the Council have been concerned with the relations of physicians to each other, and a constantly increasing number have had to do with the matter of compensation for professional service rendered to other physicians or to the members of the families of physicians. Many others have been concerned with the professional attitude that should be assumed by physicians concerning consultations with cult practitioners, and a number of more or less bitter complaints have been registered with the Council concerning the acts of members and Fellows of the American Medical Association who, it is alleged, have maintained rather close professional relations with cultists. This matter was referred to in the official report of the Judicial Council submitted to the House of Delegates in 1924 and was freely discussed on the floor of the House. In replying to specific inquiries the Council has emphasized the importance of maintaining the dignity of medicine and of upholding the soundness of the teachings of scientific medicine as opposed to the fallacies of sectarianism. Either the theories and practices of scientific medicine are right and those of the cultists are wrong, or the theories and practices of the cultists are right and those of scientific medicine are wrong. The physician who maintains professional relations with cult practitioners would seem to exhibit a lack of faith in the correctness and efficacy of scientific medicine and to admit that there is merit in the methods of the cult practitioners.

Many communications have been received pertaining to new forms of medical practice which have been proposed and which, in some instances, have actually been put into operation in various communities. These undertakings have apparently been

considered or initiated largely because of the stress of the present unfavorable economic situation. In replying to all inquiries, the Judicial Council has urged that the most careful scrutiny be made of any and every new plan proposed for providing medical or hospital service. It is not enough that these plans be considered only in the light of present economic conditions; it is essential that they be examined with a view to determining their ultimate effects on the future of medical practice and on the progress of medical science and, above all, they should be examined with the most careful consideration for their possible untoward effects on the public welfare.

APPEALS

During the year, three appeals have been made to the Judicial Council from the decisions of official bodies of constituent state medical associations. Two of these appeals were not heard by the Council because of a lack of jurisdiction created by the acts of appellants themselves. The third appeal was heard by the Council, and the decision of the council of the state medical association concerned was upheld. The questions involved in this hearing had to do with contract practice, and the fundamental issue in dispute was concerned with the ethical character of certain contracts, held by the appellants, to render medical service to groups of people on a monthly per capita plan of payment. The decision of the Judicial Council, upholding the official ruling of the council of the state medical association concerned, was based on principles laid down by the Council in an official report previously submitted to the House of Delegates and adopted by the House as the policy of the American Medical Association and was to the effect that this type of contract is unethical because it is contrary to sound public policy.

PROPOSED REVISION OF CHAPTER II, ARTICLE VI, SECTION 2 OF THE PRINCIPLES OF MEDICAL ETHICS

The pressing and widespread nature of the problem of contract practice and the apparent confusion of mind of a large section of the profession make it advisable to state more specifically in our published Principles of Medical Ethics the principles governing contract practice as adopted from time to time by this House of Delegates. This is advisable also because in these times of social and economic unrest other important questions are being actively discussed, some of which, such as health insurance, are intimately related in principle to that of contract practice.

The Judicial Council therefore recommends that chapter II, article VI, section 2, now reading "It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession" be revised by adding the following:

By the term "contract practice" as applied to medicine is meant the carrying out of an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization or individual, to furnish partial or full medical services to a group or class of individuals for a definite sum or a fixed rate per capita.

Contract practice per se is not unethical. However, certain features or conditions if present make a contract unethical, among which are: (1) When there is solicitation of patients, directly or indirectly. (2) When there is underbidding to secure the contract. (3) When the compensation is inadequate to assure good medical service. (4) When there is interference with reasonable competition in a community. (5) When free choice of a physician is prevented. (6) When the conditions of his employment make it impossible to render adequate service to his patients. (7) When the contract because of any of its provisions or practical results is contrary to sound public policy.

Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole.

Respectfully submitted.

GEORGE EDWARD FOLLANSBEE, Chairman.

FRANK W. CREGOR.

JAMES B. HERRICK.

WALTER F. DONALDSON.

EDWIN P. SLOAN.

OLIN WEST, Secretary, ex officio.

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

To the Members of the House of Delegates of the American Medical Association:

I. COMMISSIONS OF THE HOUSE OF DELEGATES

1. In 1930, the House of Delegates instructed the Council to make a study of the hospitalization of patients with nervous or mental diseases. The results of this investigation will be submitted in a separate report.

2. In 1931, the House of Delegates instructed the Council "to investigate and make recommendations looking to the establishment of proper qualifications of physicians who shall engage in special practice." An exhaustive study of the situation has led the Council to the conclusion embodied in the following resolution:

Resolved, That should the House of Delegates so order, the Council is prepared to extend to other special fields of medicine the service which it has rendered in the fields of radiology and pathology to the end that members of the medical profession and others who may be concerned may be able readily to distinguish those who have received training in the various branches of medicine from those who are merely self constituted "specialists."

The Council has taken this position for the following reasons:

(a) There are so many self anointed but unqualified specialists in the field that the public, the medical profession, the trustees of hospitals, and government officials, are unable to determine who may be trusted to perform those services which require special skill.

(b) Unless the American Medical Association shall undertake to make available lists of those who conform to uniform and approved standards in the various special fields of medicine, the multiplicity of other agencies attempting to perform this service will inevitably lead to great confusion on account of the diversity of methods employed. With state legislatures, state boards, state societies, and local and voluntary organizations of every sort assuming to pass judgment on the qualifications of specialists, only chaos can result.

(c) The American Medical Association, through THE JOURNAL and the Directory, has means of making its conclusions everywhere available, such as no other organization possesses.

(d) For such an undertaking the biographic files of the Association constitute a unique and invaluable aid.

(e) The Council already has experience in the preparation of lists of physicians specializing in pathology and radiology, so that the extension of these activities to other branches of medicine is no new and untried venture, but merely the enlargement of an already well established activity.

(f) The financial resources and stability of the American Medical Association, representing as it does the entire medical profession of the country, give to such an undertaking a guaranty of permanence and continuity which no other organization could provide.

3. In 1931, the House of Delegates also asked the Council to ascertain whether other countries discriminate against the graduates of American medical colleges. In connection with the revision of its book of Laws (Abstract) and Board Rulings Regulating the Practice of Medicine in The United States of America and Abroad, the Council has made an unusually complete analysis of the regulations of medical practice throughout the world. With the exception of Great Britain and Ireland, it is found that the nations of western Europe generally admit to practice only their own citizens, and in many of them the requirements for naturalization are difficult if not prohibitive. Inasmuch, however, as these laws apply equally to all foreigners, it cannot be said that there is discrimination against the citizens of the United States. In our own country there are nine states which make citizenship a prerequisite for licensure.

4. At the New Orleans Session, the House of Delegates urged that all possible assistance be given to small hospitals. The Council has, therefore, planned its inspection program so that approximately 25 per cent of the time will be spent in visiting small hospitals. But as there are nearly 7,000 registered hospitals in the country, not over 10 per cent can be seen in any one year.

5. A resolution was also adopted last year to the effect that as far as practicable the physicians on the staff of hospitals approved for intern training should be members in good standing of the American Medical Association. The Council has

carried out a study which shows that in 110 institutions thus far analyzed, with 9,933 physicians on their respective staffs, 66.4 per cent are Fellows and 20.7 per cent members of the American Medical Association.

II. PUBLICATIONS

6. (a) During the year the Council has contributed material for five special issues of *THE JOURNAL* dealing, respectively, with medical education, pathology, radiology, hospital service, and state board statistics.

(b) There has been published and distributed a handbook of useful information entitled *Hospital Practice for Interns*.

(c) The forty-second edition of *Laws (Abstract) and Board Rules Regulating the Practice of Medicine in The United States of America and Abroad* has been issued. It has been completely revised and much new material added.

(d) The proceedings of the twenty-ninth Annual Congress on Medical Education and Licensure are being edited and will doubtless be ready for distribution before the Milwaukee Session.

The publications of the Council are increasingly in demand in public libraries and in government offices.

III. MEDICAL EDUCATION AND LICENSURE

7. (a) The Council has approved the Louisiana State University Medical Center.

(b) The Council has approved for graduate teaching the New York State Hospital for Incipient Tuberculosis at Raybrook.

(c) The period of probation of the School of Medicine of the University of Mississippi has been terminated and the name of the school omitted from the Council's approved list, with the proviso that other schools may accord full credit for work done to students actually enrolled on Feb. 12, 1933.

8. Because the Illinois College of Physicians and Surgeons, Chicago, in soliciting students, claimed to be a "Class A Medical College," a note of warning was sent to all colleges of liberal arts in the United States and Canada.

9. As an aid to medical schools, the Council has for many years compiled and published a list of approved colleges of arts, letters and sciences, and junior colleges. Since an identical list is now issued by the Office of Education in the United States Department of the Interior, the Council has discontinued its own compilation as no longer necessary.

10. The Essentials of an Acceptable Medical School, in collaboration with the Association of American Medical Colleges, has been revised and brought up to date. In its present form, it is submitted to the House of Delegates for approval (supplement A).

11. During the past ten years there has been a steadily increasing number of applicants for admission to medical schools. When it became evident that the schools of this country could not accommodate them all, they turned first to the universities of Canada, then to Great Britain, and finally to the continent of Europe. There is reason to believe that at present not less than two thousand American students are enrolled in the medical faculties of France, Germany, Austria, Switzerland and Italy. As foreigners, these students do not enjoy equal privileges with the natives of those countries in which they are studying, so that their anticipated return to the United States after graduation constitutes a serious problem for our licensing boards and for the medical profession. On the initiative of the Council, a number of informal conferences were held resulting in the adoption, by the Federation of State Medical Boards of the United States, of the following resolution:

1. That no American student matriculating in a European medical school subsequent to the academic year 1932-1933 will be admitted to any state medical licensing examination, who does not, before beginning such medical study, secure from a state board of medical examiners, or other competent state authority, a certificate endorsed by the Association of American Medical Colleges or the Council on Medical Education and Hospitals of the American Medical Association, showing that he has met the premedical educational requirements prescribed by the aforementioned associations.

2. That no student, either American or European, matriculating in a European medical school subsequent to the academic year 1932-1933 will be admitted to any state medical licensing examination, who does not present satisfactory evidence of premedical education equivalent to the requirements of the Association of American Medical Colleges, and the Council on Medical Education and Hospitals of the American Medical Association, and graduation from a European medical school after a medical course of at least four academic years, and submit evidence of

having satisfactorily passed the examination to obtain a license to practice medicine in the country in which the medical school from which he is graduated is located.

It is expected that the enforcement of this regulation will exercise a wholesome restraint on the European migration of those less desirable students who fail to gain admission to approved schools in the United States and Canada.

For the purpose of maintaining contact with the representatives of European nations who may visit this country, a committee has been appointed representing the Federation of State Medical Boards of the United States, the New York Board of Regents, the Association of American Medical Colleges, the National Board of Medical Examiners and the Council.

12. Last year, the Council called attention to the fact that over a ten year period the number of medical graduates greatly exceeded the number of deaths in the medical profession. In the final report of the Commission on Medical Education it is shown that the ratio of physicians to population is twice as great in the United States as in England, France and Germany. Dr. Willard C. Rappleye, director of study of the commission, estimates that there is already a surplus of 25,000 physicians in this country, and he goes on to show by actuarial calculations that, with the present rate of production, the number of doctors will increase more rapidly than the general population. In spite of these conditions, there were last summer 12,280 young men and women who applied for admission to our medical schools, of whom 6,335 were accepted and actually matriculated. In the light of these facts it would seem desirable for the American Medical Association assiduously to inform the public that the profession is already overcrowded, to enlist the cooperation of college and high school faculties in placing before their pupils such information as will enable them intelligently to select a career, and to invite the active support of the Association of American Medical Colleges in bringing about a substantial reduction of their enrolment.

IV. HOSPITAL ACTIVITIES

13. (a) During the past year, 688 hospitals and other institutions have been visited by members of the Council's staff. From the Register the names of 241 hospitals have been dropped and 190 others added. In hospitals approved for intern training there has been a net loss of four.

(b) During the current year it is proposed to visit all hospitals applying for approval, all tuberculosis hospitals, all Negro hospitals, all institutions whose status is in doubt and, in addition, as many of the small hospitals as time will permit.

(c) Hospitals approved for internships or residencies are being urged to exercise the greatest care in the performance of necropsies. Stillbirths have been excluded in the calculation of the necropsy rate.

(d) Internships and residencies are being recorded in the Association's biographic files, after being edited by a member of the Council's staff.

(e) Occasionally, hospital reports indicate the presence of an intern who is not a graduate of an approved medical school, or a member of the visiting staff who is not a licensed physician. Such information is vigorously followed up.

14. The Essentials in a Hospital Approved for Residencies in Specialties is submitted for approval (supplement B).

15. In Ottawa, Ill., the osteopaths demanded the right to treat their patients in the Ryburn Hospital, which is a municipal institution. The medical staff, with the intelligent cooperation of the trustees and the city attorney, were successful in resisting the threatened invasion.

16. The Council has maintained its position that hospitals admitted to the Register should conform in their advertising to the Principles of Medical Ethics of the American Medical Association.

V. PATHOLOGY AND RADIOLOGY

17. A special committee has been appointed to advise the Council regarding its classification of pathologists. This committee has recommended that two groups be distinguished: one composed of "physicians specializing in clinical pathology," the other of "physicians specializing in pathology." Appropriate definitions for these two groups are being formulated.

18. (a) In *THE JOURNAL*, Oct. 22, 1932, were printed the names of 538 physicians who at that time had qualified for approval as clinical pathologists.

(b) The Radiologic Number of THE JOURNAL, Feb. 11, 1933, contained the names of 1,187 physicians specializing in one or more of the branches of radiology.

Respectfully submitted.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS.

RAY LYMAN WILBUR, Chairman.
JAMES S. McLESTER.
EMMETT P. NORTH.
REGINALD FITZ.
MERRITTE W. IRELAND.
CHARLES E. HUMISTON.
FREDERIC A. WASHBURN.
WILLIAM D. CUTTER, Secretary.

SUPPLEMENT A

ESSENTIALS OF AN ACCEPTABLE MEDICAL SCHOOL

I. ORGANIZATION

A medical school should be incorporated as a non-profit institution. Its board of trustees should be composed of public spirited men or women having no financial interest in the operations of the school or its associated hospitals. The trustees should serve for fairly long and overlapping terms. If the choice of trustees is vested in any other body than the board itself, that fact should be clearly stated. Officers and faculty of the school should be appointed by the board.

II. FACULTY

The school should have a competent teaching staff, graded and organized by departments. Appointments should be based on thorough training, successful teaching experience, ability in research, and willingness to pursue an academic career. In the clinical departments this does not exclude men who are in the active practice of medicine and surgery. Nominations for faculty positions should originate in the faculty, usually being made by the dean in consultation with the department heads or a committee of the faculty. Reasonable security of tenure must be assured in order that the personnel of the faculty may have adequate stability. In the preclinical sciences the faculty should include at least ten qualified persons of professorial rank,¹ devoting their entire time to teaching and to that research without which they cannot well keep up with the rapid progress of medical science. For each twenty-five students in a class there should be at least one full-time assistant in each of the preclinical departments. Salaries should be sufficient to enable members of the faculty to support themselves and their families without the necessity of devoting time and energy to other occupations.

III. PLANT

The school should own, or enjoy the assured use of, modern fireproof buildings sufficient in size to provide lecture rooms, class laboratories, small laboratories for the members of the teaching staff and advanced students, administrative offices and a medical library. Equipment should be adequate, both for student use and for research. A trained librarian should be employed to supervise the operation and development of the library, which should include the more modern text and reference books with the *QUARTERLY CUMULATIVE INDEX MEDICUS*, the *Index Catalogue of the Library of the Surgeon-General's Office* and serviceable card indexes. The library should receive regularly all of the leading medical periodicals, the current numbers of which should be in racks or on tables easily accessible to the students. At the end of each year these periodicals should be bound and added to the files of bound periodicals.

There should be a medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed so that they may be easily found and employed for teaching purposes. With each pathologic specimen coming from postmortems there should also be kept the record of the postmortem, the clinical history of the patient on whom the necropsy was held, and microscopic slides showing the minute structure of the disease shown in

the gross specimen. The museum furnishes an excellent means of correlating the work of the department of pathology with that of the clinical departments.

There should be sufficient dissecting material to enable each student to dissect at least the lateral half of the human cadaver, to provide cross-sections and other demonstration material and to allow a thorough course for each senior in operative surgery on the cadaver.

For experimental laboratory work, as well as for medical research, a supply of animals is essential. Proper provision is necessary also for the housing and care of such animals. In any use made of animals every precaution should be taken to prevent suffering, and work by students should be carefully supervised.

Each school should have such useful auxiliary apparatus as stereopticons, reflectoscopes, microprojectors, carefully prepared charts, embryologic or other models, manikins, dummies for use in bandaging, roentgen-ray apparatus, and other aids to effective teaching.

IV. CLINICAL FACILITIES

The school may own or control a general hospital. By control is meant the unquestioned right to appoint the attending staff. In this event the students come into close and extended contact with patients under adequate supervision. In the event that a medical school depends for clinical teaching on an independent hospital, it is essential that the clinical teachers, either on nomination by the school or by agreement in conference between school and hospital, be appointed by the hospital trustees to appropriate positions on the hospital staff. Such hospitals should be in close proximity to the school and have a daily average of not less than 200 patients who can be utilized for clinical teaching, these patients to be of such character as to permit the students to see and study the common variety of surgical and medical cases as well as a fair number in each of the so-called specialties. In the use of this material, bedside and ward clinics should be developed for sections of from five to ten students; and patients in medicine, surgery and the specialties should be assigned to each student under a well supervised clinical clerk system. The treatment and care of these patients should be particularly observed and recorded by the student under the strict supervision of the intern, the resident or the attending staff of the hospital. The use of existing municipal or state hospitals for teaching purposes is also advised.

The school should also own or control ample hospital facilities for children's diseases, contagious diseases and nervous and mental diseases.

The school should own or control a well ordered dispensary or outpatient department with a daily average attendance of at least 100 patients (visits). Good histories and records of the patients should be kept and the material used in medical instruction. The attending staff should be drawn largely from the faculty, including those of highest rank.

At least fifteen maternity cases should be provided for each senior student, who should have actual charge of these cases under the supervision of the clinical instructor. A carefully prepared report of each case should be handed in by the student.

Facilities should be provided for at least fifty necropsies during each school session which are attended and participated in by students. These should be performed by the professor of pathology or a member of his staff. The material thus secured should be used in connection with clinical pathologic conferences.

V. RESOURCES

Experience has shown that modern medicine cannot be acceptably taught by a school which depends solely on the income from students' fees. No medical school, therefore, should expect to secure approval which does not have a substantial income in addition to students' fees. This statement carries double weight if the school finds it necessary to maintain its own teaching hospital.

VI. ADMINISTRATION

There should be careful and intelligent supervision of the entire school by the dean or other executive officer who, by training and experience, is fitted to interpret the prevailing

1. Professorial rank as here used includes professors, associate professors and assistant professors.

standards in medical education, and who is clothed with sufficient authority to carry them into effect.

There should be a good system of records showing conveniently and in detail the credentials, attendance, grades and accounts of the students, by means of which an exact knowledge can be obtained regarding each student's work. Records should also be kept showing readily the attendance of students at the teaching hospitals and dispensaries and the maternity and postmortem cases attended. The school should require that students be in actual attendance within the first week of each annual session and thereafter. Except for good cause, such as for illness, no credit should be given for any course when the attendance has been less than 80 per cent of the full time.

Requirements for Admission. The Council approves the statement regarding entrance requirements contained in the Constitution and By-Laws of the Association of American Medical Colleges, Section 4, page 11. (See Appendix.)

A list of colleges of arts and sciences approved by the various national and regional standardizing agencies has been prepared by the United States Department of the Interior in a pamphlet entitled "Accredited Higher Institutions." Colleges on this list are acceptable to the Council on Medical Education and Hospitals. Other colleges of known repute may also be considered when the students present extra credits and exceptionally high grades.

Premedical college courses given in or by professional schools, or advanced years taken in high schools, will not be considered acceptable unless the student's credentials have been accepted by an accredited college of arts and science as meeting a part of the requirement for the bachelor's degree.

The admission of students to the medical school must be in the hands of a responsible committee or examiner whose records shall always be open for inspection. Documentary evidence of the student's preliminary education should be obtained and kept on file. When the medical school is an integral part of the university, this work usually devolves on the university examiner. Unless the university examiner and his records are closely accessible, however, some officer at the medical school should obtain and keep on file documentary evidence of each student's preliminary education, including both high school and collegiate work. The records must show especially that the required amount of work in the premedical sciences, including laboratory experiments, has been completed.

The number of students to whom an adequate medical education can be given by a college is related approximately to the laboratory and hospital facilities available and to the size and qualifications of the teaching staff. A close personal contact between students and members of the teaching staff results in an efficiency which is not possible in an institution where the number of students is excessive.

Advanced standing may be granted to students for work done in other acceptable medical schools, and in granting advanced standing there should be no discrimination against the school's full course students. Official verification of the student's previous medical work should be obtained by direct correspondence with the schools previously attended, and his preliminary qualifications should also be verified and recorded the same as for freshmen students.

Publications. The school should issue, at least annually, a bulletin setting forth the character of the work which it offers. Such announcement should contain a list of the members of the faculty with their respective qualifications. The courses available should be set forth by departments (anatomy, physiology, etc.) showing for each course its number, subject, content, character (lecture, recitation, laboratory or clinic), length of time, when, where and by whom given, and the amount of credit allowed. Information should be given regarding entrance requirements and tuition fees. The names of the students enrolled during the current or previous sessions should also be included.

VII. CURRICULUM

The Council approves the statement regarding the curriculum as contained in the Constitution and By-Laws of the Association of American Medical Colleges, Section 5, page 13. (See Appendix.)

Several of the medical schools now require an internship for graduation. Where it is not required it should be strongly urged and graduates should be assisted in securing internships in hospitals approved by the Council on Medical Education and Hospitals of the American Medical Association.

APPENDIX

From the Constitution and By-Laws of the Association of American Medical Colleges. (As amended Nov. 15, 1932.)

Sec. 4. Requirements for Admission. Admission to medical schools and medical colleges in membership in the Association may be by:

(1) Satisfactory completion of a minimum of collegiate instruction, as provided below in Subsection I; or by

(2) Examination, as provided in Subsection II.

Subsection I.² The minimum of collegiate credit required for entrance to medical schools and colleges in membership in the Association shall be not less than two full academic years, which shall include English, theoretical and practical courses in physics and biology, and in general and organic chemistry, completed in institutions approved by accrediting agencies acceptable to the Executive Council of the Association. Exception may be made under this section in that any member may admit applicants who have fulfilled the requirement in American and Canadian institutions not approved by such accrediting agencies, provided that all admissions so made be reported to the Executive Council and shall be published in the next Annual Report of the Council.

All collegiate instruction given in satisfaction of this requirement must be based on the same entrance requirements and must be of the same quality and standard of instruction as that required for a baccalaureate degree in the institution in which the candidate receives his preparation.

Subsection II. Admission to medical schools and medical colleges in the Association may be by examination.

Examinations for the purpose of admission by this method shall be conducted by institutions acceptable to the Executive Council of the Association, under the following conditions:

(a) Candidates who have completed two years of collegiate instruction and present evidence of general scholarship of high order, but who lack credits in not more than two of the required subjects, may be admitted on passing examinations in these subjects.

(b) Candidates who have completed three years of collegiate instruction and present evidence of having accomplished work of distinction in one or more fields of learning, but who lack credit in any or all of the required subjects, may be admitted on passing examinations in these subjects.

Sec. 5. Curriculum. The entire course of four years shall consist of from 3,600 to 4,400 hours, distributed as from 900 to 1,100 hours per year, and shall be grouped as set forth in the following schedule, each group to be allotted approximately the percentage of hours of the whole number of hours in the courses as stated.

1. Anatomy, including Embryology and Histology	14	—	18½ %
2. Physiology	4½	—	6 %
3. Biochemistry	3½	—	4½ %
4. Pathology, Bacteriology and Immunology ..	10	—	13 %
5. Pharmacology	4	—	5 %
6. Hygiene and Sanitation	3	—	4 %
7. General Medicine	20	—	26½ %
Neurology and Psychiatry			
Pediatrics			
Dermatology and Syphilis			
8. General Surgery	13½	—	17½ %
Orthopedic Surgery			
Urology			
Ophthalmology			
Otolaryngology			
Roentgenology			
9. Obstetrics and Gynecology	4	—	5 %
Total	76	—	100 %
Electives	24	—	0 %

2. Inasmuch as many schools have admission requirements differing from those given in this section, it is important that intending students of medicine, at an early date, inform themselves as to the exact requirements of that school in which they expect to matriculate.

When the teaching conditions demand it, a subject may be transferred from one division to another.

Sec. 6. Any medical school or medical college in membership in the Association may, with the consent of the Executive Council, conduct a six year combined collegiate and medical curriculum, provided conditions equivalent to those laid down in Sections 4 and 5 are fulfilled. The medical school must submit to the Executive Council of the Association, the proposed six year curriculum, giving the sequence of studies and the content of each course offered or any subsequent changes that may be contemplated before they go into effect.

April 1, 1933.

SUPPLEMENT B

ESSENTIALS IN A HOSPITAL APPROVED FOR RESIDENCIES IN SPECIALTIES

The training of residents in special branches of medicine or surgery represents advanced or postgraduate instruction for physicians whose ultimate aim is to prepare for the practice of a specialty. These residencies, therefore, may be regarded as recognized work toward specialization but not as sufficient preparation in themselves to qualify a physician as a specialist. For rating as a specialist, a physician should continue his studies in a recognized postgraduate school or department of a medical college. A list of qualified postgraduate institutions in the United States and elsewhere is available.

The term *residency* shall be restricted to definite periods of not less than twelve months' training, subsequent to internship.

I. APPLICANTS FOR RESIDENCIES

Candidates for residencies should be selected from graduates of approved medical schools, who have served an internship in an approved hospital or who have had two or more years in practice.

II. CREDIT FOR RESIDENCY TRAINING

As the postgraduate work of each physician is recorded in the biographic files maintained by the American Medical Association, it is incumbent that all hospitals approved for residencies in specialties make annual reports to this office.

Periods of service in hospitals approved by the Council for residencies in specialties are given full credit without further inquiry. Periods of service in unapproved hospitals are recorded as additional internships in general hospitals and as institutional experience in special hospitals.

Clinical Fellowships are distinguished from residencies as being extended periods of graduate study, under university control, which are provided for by endowment or other financial arrangement. They usually, though not always, involve the performance of original investigative work and frequently the fulfillment of definite requirements for advanced degrees.

Residencies are offered by hospitals in medicine, surgery and their subdivisions.

III. ELIGIBILITY

REGISTRATION.—Previous admission to the Hospital Register of the American Medical Association is essential.

SIZE.—The size of the hospital is not a primary consideration. The clinical material, however, should be sufficient to enable the resident to observe the principal manifestations of the disease, or diseases, he is studying.

PLANT AND EQUIPMENT.—The hospital buildings should be such as to assure the safety and comfort of the patients. There should be such equipment, appliances and apparatus as are commonly employed in the specialty in which training is offered and in the use of which the resident should become proficient.

IV. STAFF

There must be an organized staff of ethical, licensed physicians holding the degree of doctor of medicine from acceptable medical schools. The particular specialties in which residents are being trained must be represented on the staff by well qualified, experienced and proficient physicians.

In general hospitals, the staff shall further provide a definite departmental organization in those branches of medicine in which residencies are offered. The chief of service in the department, either alone or as chairman of a residency committee in that department, shall assume direct responsibility for the

training of the resident. He shall examine the qualifications of the candidates and form accurate conclusions as to the necessity for further training in the fundamentals. He shall supervise such research as the residents may conduct. He shall stimulate others of his staff to give instruction and sympathetic cooperation which graduate students require during their hospital service.

It is expected that there shall be at least monthly clinical-pathologic conferences or other regular staff meetings at which histories and clinical observations in selected cases may be reviewed, particularly when the death of patients has necessitated special study including necropsy performance. In addition to meetings of the staff as a whole, it is desirable that departmental conferences be conducted in which the resident may take an active or even the principal part to the end that the character of the service given by that department to its patients may be recurrently evaluated.

V. LABORATORIES

PATHOLOGIC SERVICE.—There must be a clinical laboratory equipped to perform routine and special tests in charge of a qualified pathologist. He shall be prepared to cooperate fully in the training of the residents and to supervise any direct contact which the resident has with the laboratory.

Residents in pathology must serve under a pathologist who is at least eligible for the Council's approved list of specialists in pathology. In addition, the department should provide apparatus, reagents or materials necessary to the operation of a modern pathologic laboratory.

RADIOLOGIC SERVICE.—The roentgen-ray laboratory shall be under the direction of a qualified roentgenologist, proficient in the mechanical and interpretative functions of his specialty. He must likewise cooperate in all matters pertaining to the residencies which fall within the purview of his department. The department should contain roentgenologic, roentgenoscopic and, where required, therapeutic equipment.

Residents in roentgenology or radiology should serve under a specialist who is eligible for inclusion in the list of qualified roentgenologists as prepared by the Council. The laboratory should contain complete diagnostic and therapeutic equipment.

VI. NECROPSIES

Thoroughness in postmortem performance should be emphasized. All hospitals desiring approval for the training of residents must examine post mortem 15 per cent or more of their fatal cases. The necropsy records should be complete, should be kept on file, and should include a summary of the clinical record.

Necropsies should be witnessed as often as possible by the resident. He may, with value, participate in their performance, in the writing of the protocols, and in preparing the final record in which appears a detailed description of both the gross and the microscopic observations.

VII. MEDICAL LIBRARY

The hospital shall maintain, or provide ready access to, an adequate medical library.

VIII. HISTORIES AND RECORDS

There must be complete histories, giving the patient's complaint, physical examination at time of admission to the hospital, preliminary diagnosis, laboratory observations, descriptions of operation, if any, daily record of case, final diagnosis, condition and date when discharged from hospital, end-results, and, in case of death, necropsy observations, if necropsy is performed.

The histories should show by signatures, or initials, all persons writing them or parts of them as well as the staff members by whom the histories are verified. Likewise, all orders and progress notes should be initialed or signed.

The records should be in charge of some competent person, preferably a trained record librarian. Alphabetical and diagnostic indexes of the patients should be maintained and the records filed so as to be readily accessible from either index.

IX. WORK OF THE RESIDENT

The resident's term of service should cover at least twelve months.

Aside from daily contact with patients and staff men, the assumption of responsibility is the most valuable aspect of a residency. As ability is demonstrated, an increasing amount

of reliance should be placed in the judgment of a resident both in diagnosis and in treatment. This essential strict supervision, however, should never be relaxed.

The resident should be encouraged to contribute to the effectiveness of hospital service by some investigative work. This may take the form of research in the hospital laboratories or wards, summaries of literature, or the preparation of statistical summaries and analyses derived from the hospital record department.

X. RESIDENT-INTERN RELATIONSHIP

Those hospitals training both residents and interns should recognize their responsibility to both groups and not curtail too sharply the opportunities ordinarily given to interns by an excess of solicitude for the residents. The residents may, with profit, teach the interns, supervise their record work, and direct the treatments which interns administer. They should not, however, act so as to diminish the contact of the interns with the attending men nor assume the supervisory or disciplinary functions of the staff intern committee.

XI. RESIDENCIES IN SPECIAL HOSPITALS

For educational purposes the Council will recognize not more than the first three years of service in a special hospital, notably those for psychiatric and tuberculous patients.

XII. ADMISSION TO THE APPROVED LIST

Hospitals that conform to the foregoing standards are approved by the Council after an application has been filed and an inspection has been made by the members of its staff. Approval may be withdrawn whenever it appears that the institution no longer conforms to these Essentials, or when the residencies remain vacant for a period of two or more years.

Hospitals that wish to be approved for the training of residents should apply to the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago.

REPORT OF THE COUNCIL ON SCIENTIFIC ASSEMBLY

To the Members of the House of Delegates of the American Medical Association:

The Council on Scientific Assembly has held its usual meetings during the past year and has been chiefly concerned with the preparation of the scientific program.

A conference with the secretaries of the sections of the Scientific Assembly with the Council was held, Dec. 17, 1932.

A splendid program of clinical lectures has been arranged for Monday, June 12, and Tuesday, June 13.

The program of the Section on Miscellaneous Topics at the Milwaukee Session will be devoted to the general subject of anesthesia. Dr. A. H. Miller of Providence, R. I., will serve as chairman and Dr. John S. Lundy of Rochester, Minn., as secretary of this section.

No resolutions or memorials have been referred to this Council during the past year.

ASSIGNMENT FOR SECTION MEETINGS AT MILWAUKEE SESSION

MORNING	AFTERNOON
Practice of Medicine	Pediatrics
Obstetrics, Gynecology and Abdominal Surgery	Surgery, General and Abdominal
Laryngology, Otology and Rhinology	Ophthalmology
Pathology and Physiology	Pharmacology and Therapeutics
Orthopedic Surgery	Nervous and Mental Diseases
Urology	Dermatology and Syphilology
Preventive and Industrial Medicine and Public Health	Gastro-Enterology and Proctology
Miscellaneous Topics	Radiology

Respectfully submitted,

JOHN E. LANE, Chairman.

ROGER S. MORRIS.

IRVIN ABELL.

FRANK SMITHIES.

FRANK H. LAHEY.

DEAN LEWIS, President-Elect.

MORRIS FISHBEIN,

Editor, THE JOURNAL.

OLIN WEST, Secretary.

Ex officio.

CLINICAL LECTURES TO BE GIVEN AT THE MILWAUKEE SESSION

The clinical lecture program will be given in Plankinton Hall at the Milwaukee Auditorium. There will be lectures on Monday afternoon, June 12, and on Tuesday morning and afternoon, June 13.

The program will include the following lectures:

MONDAY, JUNE 12—2 P. M.

Nasal Sinusitis.

L. W. DEAN, St. Louis

Lymphogranuloma Inguinale.

HAROLD N. COLE, Cleveland

Migraine.

PETER BASSCE, Chicago

TUESDAY, JUNE 13—9:30 A. M.

Infectious Mononucleosis (Glandular Fever).

THOMAS P. SPRUNT, Baltimore

Recent Progress in Thoracic Surgery.

CARL A. HEDBLUM, Chicago

Diagnosis and Treatment of Injuries of the Head.

WALTER E. DANDY, Baltimore

TUESDAY, JUNE 13—2 P. M.

Clinical Control of Chronic Hemorrhagic States in Childhood.

I. NEWTON KUGELMASS, New York

Purpura and Pathologic Hemorrhage.

RUSSELL L. HADEN, Cleveland

Clinical Interpretation of the Electrocardiogram.

L. M. HURXTHAL, Boston



THE MILWAUKEE AUDITORIUM

Headquarters of the Annual Meeting of the American Medical Association, June 12-16

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 6, 1933

ADAPTATION TO CLIMATE

Man's adaptation to climate plays an important part in the progress of civilization.¹ For example, climate seems rather naturally to make its own adaptation of the individual in the matter of exercise. As Williams² has pointed out, persons who live for any length of time in the South gradually develop a distaste for exertion of a physical kind. In the North there is quite naturally an inclination even in winter for vigorous outdoor life. Nature should be followed. The winter time is the most important time to carry on outdoor activities. Vigorous walking, outdoor games, skating and coasting are healthful sports. Limitations imposed by the weather cause people to live unhygienic lives during the winter. For many persons it is a period of semihibernation.

There is a widespread belief, promoted, it may be, by Huntington's essays, that the most stimulating quality of man's environment is a mean temperature between 38 and 64 F., with frequent fluctuations of moderate extent across this mean range. We are told that various phases of human social and economic development have proceeded with greatest rapidity and been most extensive in regions where the climate is characterized by such temperature conditions. Where it remains above 64 all, or nearly all, the time, or below 38, little development of humanity takes place unless the climate is possessed of great variability or storminess. Sufficiently wide and frequent changes in temperature, however, seem able to neutralize the depressive effects of heat on man. Unfortunately, the large land and population masses in the tropics and subtropics are handicapped by both heat and lack of variability.

A number of investigations have been undertaken to ascertain some of the reactions of experimental animals to prolonged extremes of environmental temperature and humidity. In the most recent of these studies, by

Ogle and Mills,³ at the University of Cincinnati, the investigators found that animals adapted to constant heat lose to a considerable degree their ability to produce heat and keep warm under chilling emergencies. Those adapted to a cooler environment are more able to meet chilling conditions by increased heat production but succumb to excessive heat much more readily than do those adapted to constant warmth.

The Cincinnati investigators regard the most interesting part of their observations as relating to the effects of temperature variability on metabolism. A few hours of cooling each day is shown to overcome the depressing influence of a hot environment. Animals spending two thirds of the time in the hot room but cooled a while each day are found to have more active combustion than even the cold room ones. Ogle and Mills believe that these differences in metabolism under the various conditions are mainly dependent on changes in suprarenal function, secondarily influencing the utilization of glycogen. Definite and certain proof for this, however, is not yet at hand. There are further implications drawn by Ogle and Mills. They remark that in certain of the most stimulating areas of the earth it seems evident that the climatic drive is exceeding man's bodily capacity to respond, with the result that in these regions metabolic breakdown is manifesting itself with increasing severity and frequency. The death rate from diabetes, for instance, is steadily rising in spite of the free use of insulin, while the increase in diseases of the heart and blood vessels gives real cause for alarm. Are we to believe that we may become victims of the climates that have heretofore been extolled as the most invigorating environments of man?

DISTURBANCES OF THE HEART AS INDICATION FOR SURGICAL INTERVENTION IN HYPERTHYROIDISM

The behavior of the heart in hyperthyroidism presents a number of interesting problems for the surgeon and the internist. Thyrotoxic damage to the heart muscle was recognized by Kocher years ago. Now it is quite generally accepted that thyroid hyperactivity is capable of producing disturbances of cardiac function ranging from relatively innocent tachycardia to grave myocardial damage. One third of all arrhythmias seen by him in Munich, according to F. Mueller, were thyrogenous. Romberg¹ assigns an important place to the thyrogenous factor in the etiology of arrhythmia. The action of thyroxine here is spent on the sinus area. Tachycardia of thyrogenous origin may assume the paroxysmal form.

Julius Bauer² said some years ago that sudden death in hyperthyroidism is frequently the result of transition

1. Huntington, Ellsworth: *Civilization and Climate*, ed. 3, Yale University Press, New Haven, 1925.
2. Williams, J. F.: *Personal Hygiene Applied*, ed. 2, Philadelphia, W. B. Saunders Company, 1923.

3. Ogle, Cordelia, and Mills, C. A.: *Animal Adaptation to Environmental Temperature Conditions*, *Am. J. Physiol.* 103: 606 (March) 1933.
1. Romberg, Ernst: *Lehrbuch der Krankheiten des Herzens und der 25. ere Secretion: ihre Physiologie, Pathologie und 1927.*

of fibrillation from auricles to ventricles. Goodpasture,³ Loos and other authors described myocardial changes in connection with thyrotoxicosis. Fatty degeneration, brown atrophy, round cell infiltration, fibrosis and myelomalacia have been described. Hirotooshi Hashimoto⁴ succeeded in producing an experimental myocarditis of thyrogenous origin. That thyrotoxic patients die of heart failure, as a rule, was pointed out by Möbius in 1886 and was reemphasized by Romberg in 1925.

Characteristic of the thyrotoxic heart is its vigorous action. The apex beat is forceful and heaving or lifting. There is a diffuse precordial pulsation and throbbing of the abdominal aorta and of the carotids. The pulse is rapid and full. The patients complain of palpitations, pauses, extrasystoles and, in general, of unpleasant sensations in the region of the heart. In time, hypertrophy and dilatation of both chambers, especially of the left, can be established. There may be occasional extrasystoles or permanent arrhythmia due to auricular fibrillation. There may be nothing abnormal about the blood pressure, though the pulse pressure is frequently increased. The first sound at the apex is loud and prolonged. Frequently a systolic murmur may be heard with the first sound or may replace it (Borchard, Bauer, Romberg). Not infrequently a murmur is heard with the first aortic sound. These murmurs owe their existence to myocardial changes. Bauer detected not infrequently a presystolic rub characteristic of mitral stenosis. In the absence of a valvular lesion, the mechanism of this murmur is explainable on the basis of a relative narrowness of the ostium in the presence of a greatly dilated left auricle and beginning dilatation of the left ventricle. Still another factor may be interference with the conductivity of the bundle of His, for heart block has been observed in hyperthyroidism. The murmur heard with the first aortic sound can be explained on the basis of a change in the aortic tonus and is due to a relative narrowing of the aorta for the blood volume at a given moment. This is frequently confused with syphilitic aortitis.

Thus objective signs of disturbances of the heart and aorta are significant in the diagnosis and prognosis of hyperthyroidism. Even more important, they may constitute an indication for early operative intervention. A proper appreciation of the rôle of the heart in thyrotoxicosis is essential to recognition of certain obscure forms in which the manifestations, both as to time of appearance and the degree of intensity, belong to the cardiovascular system. Such forms have been abundantly described in literature as *formes frustes* by Charcot, atypical Basedow by Kocher, basedovoid types by Stern, prebasedow by Zondek, thyrogenous constitution by Bauer, and thyreocardiacs by Lahey.

A Basedow heart may exist in the absence of the usual syndrome of thyrotoxicosis; the reverse is rare. Romberg, in his classic treatise, states that "atypical forms of Basedow disease are characterized most frequently by cardiac manifestations."

It seems to be generally agreed that the most efficient method of treating thyrotoxicosis today is by subtotal removal of the thyroid gland. Many leading surgeons favor surgical treatment in the presence of even mild cardiac signs if they are of thyrogenous origin. Attempts at control of these symptoms by roentgen irradiation or by iodine therapy is, as a rule, inefficient, while valuable time is wasted and pathologic changes in the cardiovascular system progress. The operative mortality need no longer act as a deterrent. Indeed, Pemberton⁵ was able in 1923 to report a mortality of less than 1 per cent. Statistics from Kocher's clinic and from the Mayo Clinic give 86 per cent of satisfactory results after operations in serious cases of hyperthyroidism. In Bauer's opinion, grave thyrotoxicoses with signs of cardiac insufficiency, extreme emaciation and a profound nervous state offer a poor prognosis unless operation is prompt. The earlier the case is turned over to the surgeon, the less is the operative risk. Complete return to normal on the part of the heart is hardly to be expected if dilatation has taken place.

BACTERIOPHAGE THERAPY

The early hopes of bacteriophage therapy have hardly been realized. In spite of much experimentation, which has shown why bacteriophage could not function therapeutically, at least as a specific agent pitted against a specific infection, clinical observations have been accumulating which indicate that intravenous injection of bacteriophage may have beneficial effects.

The material labeled "bacteriophage" which the clinician injects into a patient with severe septicemia is obtained by first growing the particular bacterium on a broth medium and then introducing bacteriophage into the turbid culture. After further incubation the material becomes entirely clear, showing that the bacteria have been dissolved and killed by the bacteriophage, the concentration of which has increased sufficiently to cause bacterial disintegration.

Obviously, such a bacteriophage solution is not a simple solution or suspension of bacteriophage. It contains peptone, which was present in the original broth culture; and peptone, as is well known, will itself cause a nonspecific protein reaction on injection. The solution contains also all the bacterial proteins set free as a result of the lysis exerted by the bacteriophage. These bacterial elements are probably present in a far more soluble form than could be obtained by the most thorough thermal or other treatment, such as is used in killing a culture preparatory to its use as a vaccine.

3. Goodpasture, E. W.: Myocardial Necrosis in Hyperthyroidism, *J. A. M. A.* 76: 1545 (June 4) 1921.

4. Hashimoto, Hirotooshi, cited by Lucien, M.; Parisot, J., and Richard, G.: *La thyroïde*, Paris, 1925.

5. Pemberton, J. deJ.: Mortality in Surgery of Exophthalmic Goiter, *Surg., Gynec. & Obst.* 36: 453 (April) 1923.

These disintegrated cultures of bacteria may therefore be considered supervaccines containing all the chemical constituents of the bacteria. Now, whether the mechanism of bodily resistance to bacterial invasion is an allergic or an immunologic phenomenon, it is obvious that any benefit arising from the introduction of specific antigens would be enhanced by their presence in a more soluble and hence more available form. Larkum¹ more particularly has emphasized this idea and advocated, in general, the use of lysed bacterial cultures instead of the ordinary vaccine as being much more effective.

The original conception of bacteriophage as a benevolent organism attacking and destroying other pathogenic organisms stimulated the imagination. Though its use as a specific agent has been disappointing, it may yet yield important results by showing how more effective vaccines may be prepared. Moreover, from the theoretical side the ability to obtain thoroughly broken down bacteria may lead to more fruitful study of the essential though complicated chemical building stones that go to make up these minute living organisms.

Current Comment

MAGIC IN THE FOOD FIELD

Belief in magic is still widespread among vast numbers of people. Even physicians, presumably scientifically trained, are not free from extraordinary and mystical notions, particularly in the fields of diet and allergy. To diet Dr. Mary Swartz Rose¹ pays special attention in a recent review of strange notions in this field, presented as an address before the American Dietetic Association. After paying her respects to the folly of fletcherization, she analyzes some of the views held by modern food faddists, including those who insist that combinations of acid fruits with meat or eggs will generate alcohol in the stomach, and that it is dangerous to mix proteins and starches. She points out that our daily bread and daily potatoes happen to be mixtures of this character. After all, facts are hampering for the faddist. Of late the notion that acidity must always be combated and dietary alkalinity promoted has been especially featured in the promulgations of the food cultists. Every time a new fact is discovered in the food field, some promoter exploits that fact for commercial gain. The mere emphasis by Prof. H. C. Sherman on the possibility of deficiencies in calcium in the American diet led to the exploitation of mineralized candy, with the argument that calcium deficiency was responsible for diabetes and cancer. Dr. Rose particularly complimented the work of the American Medical Association in exposing such notions. Thus, she said to the dietitians: "Make use of the information which can be obtained from the American Medical Association. Its reports, the results of sea-

soned judgment as to what may be legitimately said of these fakers, are most helpful." Today there are 2,500 members in the American Dietetic Association, presumably scientifically trained in good nutrition. Their cooperation with the medical profession in educating the public regarding the danger of belief in magic will be invaluable for advancement of public knowledge in the food field.

PHYSICIANS NEEDED FOR CIVILIAN CONSERVATION CORPS—REFORESTATION CAMPS

Under the heading Government Services, in this issue of *THE JOURNAL* (page 1442), appears a statement relative to the development of suitable medical service for the reforestation camps to be established by the U. S. government as a part of its attempt to relieve the unemployment situation. At present, several hundred physicians are needed in this work. Applications are to be made directly to the commanders in various corps areas. The regulations under which the medical care of these employees of the government is to be conducted seem to afford a recognition of certain basic principles for which the medical profession has long contested; namely, the use of civilian hospitals in areas adjacent to the camps when hospitalization is necessary and the use of civilian physicians for medical work when the situation does not call for a full time employee of either the U. S. Army Medical Corps or the special medical corps to be developed for this new service. It is understood that President Roosevelt feels earnestly indeed the importance of achieving success in this venture as a part of the rehabilitation plan for the entire economic situation. No doubt, a sufficient number of physicians will apply for the positions available. Those interested should make their applications immediately to the commanders at the addresses listed in the item already referred to.

VIABLE AND NONVIABLE BACTERIAL DISSOCIATES

The failure of bacteria to multiply after exposure to physical or chemical antiseptics is not conclusive evidence of the "death" of these micro-organisms. Dr. F. L. Gates¹ of Harvard University alleges that exposure to borderline doses of ultraviolet radiation may destroy the multiplication potential long before the growth potential is seriously affected. After exposure to rapidly lethal irradiation, for example, the individual colon bacillus shows no subsequent increase in size and no cell division. The killed bacterium usually degenerates into an irregularly refractory "ghost." After borderline irradiation, however, exposed bacteria often increase in size but do not divide on reaching the normal adult stage. Long actively motile, highly refractory protoplasmic filaments are formed, many of which eventually degenerate into nonviable "ghosts." In certain cases, however, a normal-looking bacillus may "pinch off" from one end of the giant filament and then multiply rapidly to normal colony formation.

1. Larkum, N. W.: *J. Lab. & Clin. Med.* 17: 675 (April) 1932.

1. Rose, Mary Swartz: *Belief in Magic*, *J. Am. Dietet. A.* 8: 489 (March) 1933.

1. Gates, F. L.: *Science* 77: 350 (April 7) 1933.

This apparent "dissociation" of certain environmentally injured bacteria into viable and nonviable fragments may conceivably have a direct bearing on future theories of so-called bacterial pleomorphism.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

May 9. Tonsils and Adenoids.

May 11. The Family Doctor.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

May 13. Mothers.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Twenty-Ninth Annual Meeting, held in Chicago, Feb. 13 and 14, 1933

(Continued from page 1345)

DR. CHARLES E. HUMISTON, Chicago, in the Chair

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

FEBRUARY 14—AFTERNOON

The Training of Technicians for the Clinical Laboratory

DR. WALTER M. SIMPSON, Dayton, Ohio: The ever-widening scope of laboratory investigation as an aid to clinical diagnosis and as a guiding influence in rational therapy makes it imperative that the individual laboratory worker be thoroughly capable of fulfilling the responsibilities placed on him. This statement applies equally to the physician who has chosen to specialize in the field of clinical pathology and to the lay person who works under his direction. Only those licensed physicians who have specialized in clinical pathology and its allied sciences for a period of three or more years are now recognized as possessing the qualifications for the directorship of a clinical laboratory. The importance of applying a similar degree of rigidity to the requirements for qualification as a capable laboratory technician has become more apparent. Since the confidence of medical men in the clinical laboratory depends on their belief in the moral integrity and technical ability of the laboratory workers, the members of the American Society of Clinical Pathologists have striven for years to elevate and standardize the training of laboratory technicians. In 1928 the society established a board of registry of technicians, composed of six members elected by the society. The objects of the registry are: (a) to maintain the minimum standards of educational and technical qualifications for various technical workers in the clinical research, public health and hospital laboratories; (b) to receive applications for registration and to issue a certificate of registration to those who meet these minimum standards; (c) to register schools and clinical laboratories which offer a course of laboratory training in accordance with the accepted standards proposed by this board; (d) to cultivate a high ethical standard among laboratory technicians in accordance with the Code of Ethics established by the American Society of Clinical Pathologists.

Applicants for certificates must have been graduated from an accredited high school or have received acceptable equivalent education. In addition, they must have successfully completed a year's course in college chemistry and biology, or an equivalent thereof, such as graduation from an approved train-

ing school for nurses, or they must have received credits in basic sciences, which in the opinion of the board are of equal value to the technician. Lastly, they must have successfully completed a minimum of twelve months of instruction in an approved school for technicians or an apprenticeship of at least one year under the guidance of a qualified clinical pathologist. Beginning April 1, 1933, all applicants to the registry must pass an examination conducted by a member of the American Society of Clinical Pathologists. The Code of Ethics of the American Society of Clinical Pathologists demands that all registrants must agree to work at all times under the supervision of a qualified physician and that they shall under no circumstances, on their own initiative, render written or oral diagnoses except so far as is self evident in the report, or advise physicians or others in the treatment of disease. Finally, the registrant must agree not to operate a laboratory independently, without the supervision of a qualified physician or clinical pathologist.

For outstanding service rendered in any of the branches of clinical pathology by research, teaching or other outstanding scientific endeavor, the board may grant to those worthy of special recognition the title of Medical Technologist.

Those schools and laboratories offering a course of instruction to prospective laboratory technicians must subscribe to the ethical requirements observed by individual physicians and medical organizations. Institutions which are not under the direct supervision of a recognized clinical pathologist or which lack an adequate teaching force, material or equipment, or which, in the opinion of the board of registry, resort to unethical advertising or charge unreasonably high fees are not approved by the board. At present, more than 1,300 qualified technicians are registered. The American Medical Association and the American College of Surgeons have endorsed the work and the aims of the registry by encouraging hospital administrators to urge their clinical laboratory technicians to seek certification by the registry. Many laboratory directors and hospital superintendents now consider as candidates only those applicants for laboratory positions who are certified by the board of registry. The standard of laboratory technical work would be greatly elevated, and many inadequately trained persons would be eliminated from this important field, if hospital administrators would insist on certification by the board of registry as the first requirement for consideration for such a position of trust. The board of registry also maintains a placement bureau for registered technicians and technologists at its headquarters in Denver.

The demand for technicians during the past few years has caused many inadequately trained persons to enter the field. This evil has been fostered by commercial schools, many of which offer short, inadequate courses at exorbitant tuition rates. Many of these schools depend for their existence on unscrupulous advertising and the lure of high salaries to their graduates. Medical journals that accept the advertisements of commercial schools which do not conform to the minimum standards established by the Board of Registry of the American Society of Clinical Pathologists must share the responsibility for a situation which seriously threatens the welfare of physician and patient. Only those advertisements should be accepted which carry a statement to the effect that the school is approved. The deleterious influence exerted by commercial schools in all branches of medicine is too well known to provoke further comment.

The logical places for instruction and practical training in the field of medical technology are the universities and the hospital laboratories of qualified clinical pathologists. The four-year combined courses offered at the University of Minnesota, the University of Kansas and Northwestern University provide an ideal background of broad basic training and practical experience to those who wish to make this field their life work. Other universities (about ten in number) offer special one and two year courses to those who satisfy certain prerequisites. The growing importance of this field should make it evident to the deans and faculties of American medical schools that a more or less uniform curriculum in medical technology should be offered in medical schools either as a two year course leading to a certificate or as a four year course leading to a degree of Bachelor of Science (in Medical Technology). The Council on Medical Education and Hos-

pitals of the American Medical Association has conducted surveys of clinical laboratories since 1924. The recent shift in emphasis from the laboratory as a hospital or private project to the director of the laboratory as an individual indicates recognition of the inevitable fact that personnel far transcends matériel. This applies to the laboratory technician or technologist as well as to the physician-director.

DISCUSSION

DR. J. J. MOORE, Chicago: The situation is so acute that technicians may be obtained to work in hospitals in the larger centers for their room and board. However, the study of the training of technicians should be considered because of the replacements of those who are leaving this profession. Large numbers of young people write for information regarding institutions where they can get training for laboratory work. They obtain it in pamphlets and letters sent out by the institutions that are primarily interested in making a profit from the candidates. They extol the career of a technician and always intimate that positions can be readily obtained as soon as they complete their course. There should be some control of these schools. The Board of Registry of the American Society of Clinical Pathologists has attempted to control them, but the attempt has not reached far because it has been during the last year only that they have given out a list of accepted schools. There should be a minimum of entrance educational requirements for those who enter the technician field. High school graduation plus one year of college or a nurse's training are not any too great. When one considers the responsibility placed on the technician, this individual must have good fundamental training. However, they vary. One who has only part of a high school education may make the best kind of laboratory technician, and a college graduate with a nurse's degree may never make a technician. They must be laboratory minded. The board of registration has 1,300 technicians registered. There are about 7,000 hospitals in the United States. I don't know how many of those are approved; say at least 5,000. The American College of Surgeons and the American Medical Association through the Council on Medical Education and Hospitals, when their inspectors go out, ask the technicians in the hospitals if they are registered, and recommend that they be registered if they are not. It will take five or ten years before all the technicians who are properly qualified will be registered. It has taken that long since the American Medical Association started to approve or qualify the pathologists. And all those who are qualified are not on the approved list yet. When it comes to approving the schools for training technicians, I think that work should be turned over to the Council on Medical Education and Hospitals, which has been working for a long time, as I understand it, in examining these schools. I think that both the American College of Surgeons and the American Medical Association should continue to support the Board of Registry of the American Society of Clinical Pathologists in the registration of these technicians. While the Council on Medical Education and Hospitals could approve the schools, the American Society of Clinical Pathologists could approve the technicians, and those who didn't graduate could be approved of because they took their training in the individual laboratories of the approved clinical pathologists, men and women not running schools, but training technicians, and these technicians would have the proper training.

DR. A. S. GIORDANO, South Bend, Ind.: Dr. Simpson's paper expresses the feeling of the American Society of Clinical Pathologists. We would be glad to follow Dr. Moore's suggestion to pass this on to the Council on Medical Education and Hospitals with our complete cooperation. I should like to emphasize the suggestion that the Council on Medical Education and Hospitals in its cooperation in this program go on record to prohibit the pages of the journals published under its control from having the freedom of advertising schools not accepted as qualified to teach technicians.

DR. NORBERT ENZER, Milwaukee: Over a period of six years, I have turned out a number of student technicians. It is not the fault of the clinical pathologists or of those looking for a career that there is a problem concerning clinical pathology. The physicians themselves have relegated this important department of medicine to so low a standard that they subject

their patients to incompetence until the market is flooded with incompetent help. When physicians realize the importance of this work, we may begin to raise the standards for entrance into this field. Hospital administrators have been equally guilty of approving training of technicians in hospital clinics by those not qualified to train them. Hospital administrators have used for a long time the excuse of training technicians to cut down on the budget of the laboratory, and they have made use of these poor souls, giving them so-called free instruction, and then profited by their efforts in the laboratory. They have put them to the task of doing the menial jobs first until they have acquired a certain clerical dexterity, and after six months or a year they have been turned out as technicians. The great majority of them are not. Those of us in clinical pathology are aware of the inadequate technical features, let alone the interpretation of laboratory procedure. Who hasn't seen blood smears made in offices and hospitals that looked like thickly spread butter on bread? I lay the guilt for that situation on doctors themselves who have had so little regard for this work and to those who have incurred training in hospital laboratories not equipped to train technicians. Any training that is worth getting is worth being paid for. When there is an adequate, suitable, uniform tuition rate, the undesirables in this type of work will be weeded out. Those willing to pay for the education are generally the ones who turn out well. Those physicians who are about to employ technicians must first know what they want, what kind of work they have to perform. Technicians leave institutions well qualified in bacteriology, some in hematology, others in tissue work, but hopelessly inadequate for the type of work to be done in an office.

THOMAS G. HULL, PH.D., Chicago: Standardization can be carried too far. It is impossible to have a technician cover the whole field of medical laboratory work. Technicians should be asked "What specialty are you trained for?" and they should be made to stick to that specialty.

DR. WALTER M. SIMPSON, Dayton, Ohio: One point that has developed from the discussion is in regard to supervision of the technicians. The American Medical Association and the American College of Surgeons have stated that the technicians must be under the control of a pathologist or a physician, and it is in that last clause that I find a source of great difficulty about the country. I have found hospitals in which inadequately trained technicians, turning out erroneous and often disastrous reports, are under the control of a physician who has no interest in the field of clinical pathology, and the only reason for his assignment to that job is to cover the requirements. In that field, we as members of the American Medical Association and the members of the American College of Surgeons have contributed, unwittingly, perhaps, to a bad situation. There are towns in which the situation has obtained that one physician has been assigned to the directorship of the laboratory, and his only interest is that of obtaining a few dollars. He never goes to the laboratory. He does satisfy the requirements of the American College and the American Medical Association. But there have been available in the same town men who are adequately trained who have not been given the job that they should have. It all goes back to safeguarding the interests of the patient. That should be our goal.

The Need of Professionalization in Public Health

DR. JOHN A. FERRELL, New York: This article appears in full in this issue of THE JOURNAL.

DISCUSSION

DR. WALLER S. LEATHERS, Nashville, Tenn.: In this country we seem to lack uniformity in laws with reference to public health work, which I think is a grave defect. There are forty-eight states, and forty-seven of them have physicians serving as state health officers. One has a layman. I believe that is perhaps New Jersey. And of these states only thirty-eight have laws specifying that one who serves as a health officer must be a physician. The public health leadership of this country should in large measure be in the hands of the medical profession. I refer particularly to the health officers. It would be difficult for us to maintain the proper affiliation with the medical profession if we get too far away from the principle that one who is appointed to a position of responsibility in health work

shall be a graduate of medicine. Dr. Ferrell mentioned that there are 967 cities of 10,000 population or more, and of these 416 have full-time health officers, of which 265 are physicians and 151 are laymen. One health officer is a veterinarian, one is a dentist, one is a bacteriologist. That varied type of personnel seems to me to be quite illogical from the standpoint of meeting this responsibility in a scientific manner. There is great need of determining just those qualifications which one should possess who is appointed as a health officer. He also mentioned that of cities of 100,000 or more, of which there are ninety-three, twenty have part-time health officers and seventy-three have full-time health officers, and sixty-seven of the ninety-three are physicians and six are laymen, showing again a departure from the principle of recognizing leadership in this respect in the medical profession. There is great need for medical men who are interested in the future of public health to express their attitude and determine what we should have in this respect in developing health personnel in the future. There are 596 county health departments in this country, all of which have physicians in charge of the health work in those areas. The National Board of Medical Examiners is interested in this kind of problem. We are agreeable to discussing the matter with those interested, and, if practicable, work out some scheme of value in this particular in the United States.

Who Should Teach Physical Therapy?

DR. F. J. GAENSLER, Madison, Wis.: It may be well if we as teachers consider treatment under the three heads of medicine, surgery and physical therapy, in order to keep in mind that there is a definite place for physical therapy in treatment. The foundation of instruction of the undergraduate in physical therapy should be laid in a didactic and practical course preferably in the third year. The didactic course can probably be adequately covered by one lecture a week during a single semester, while the clinical application can be covered in a practical course of perhaps double the period given to lectures. The general course must be comprehensive, including the consideration of every type of physical therapy. If there is lack of cooperation on the part of clinical instructors, the student is apt to get the idea that physical therapy is more or less of a fad. The student should learn that heliotherapy may spell the difference between arrest and recovery in bone and joint tuberculosis, that there is ample clinical evidence that ultraviolet radiation is a specific in rickets, and that it promotes the development of sound bones and teeth. He should learn the uses, therapeutic and diagnostic, of the galvanic and faradic currents in various forms of nerve injury. He should learn that massage and muscle training are of far more practical value in rehabilitation than electricity. While muscles will frequently respond to suitable currents, the response is confined practically to a single segment in the neuromuscular unit. The voluntary effort and resulting motion, however slight, exercises not only the muscle but the upper and lower motor neurons as well as the muscle fibers. The voluntary effort, however feeble, calls every portion of the neuromuscular apparatus into play. No opportunity should be lost in pointing out limitations to any type of physical therapy. A careful diagnosis is of first importance, the pathology of the part being constantly visualized.

When installation of a department of physical therapy is considered by a hospital staff, there is, I am sure, in the minds of most of those concerned a vision of expensive and complicated machinery, when as a matter of fact 90 per cent of the necessary work in a general hospital so far as physical therapy is concerned can be accomplished by exercises, massage, muscle training, and posture work with no other equipment than can be found in an ordinary home. The 10 per cent not covered by the foregoing will require the services of trained specialists, skilled in the use of ultraviolet radiation, in diathermy and in the roentgen ray and radium for high voltage therapy, a field that must be considered as distinctly apart from that suitable for the activity of the general practitioner. Only larger, well financed institutions with a well trained staff, including physical therapists, to assist in the carrying out of the program as determined by the physicians in charge, should strive for completeness in this field. Outside of this limited though important special field, the requirements for good work in general physical therapy may be met with a minimum of equipment, intelligently and widely used.

We are too apt to think of physical therapy in connection with injuries when as a matter of fact there is a large field for this branch of therapy in internal medicine and in general surgery as well as in the specialties. We are too apt to forget that the body as a whole suffers with the injury of the part and that attention to these facts will do much to shorten convalescence and reduce the burden incidental to invalidism. The student should be reminded constantly that while medicine and surgery alone supply the essentials in the majority of conditions, physical therapy should not be overlooked as an aid in expediting recovery. While the general principles and technic should be covered by the didactic and practical work in the department of physical therapy under the direction of the head of medicine or surgery, the indications as well as the limitations should be constantly pointed out by every member of the teaching staff as opportunity arises. Not until we have such cooperation will our full duty be performed and physical therapy reach the position in the art of healing which it deserves.

The Council on Physical Therapy of the American Medical Association: Its Problems and Its Progress

DR. HARRY E. MOCK, Chicago: The decade following the war witnessed an influx of physical therapy apparatus and the adoption of these new therapeutic agents by many of the profession. The simpler measures of massage, heat and exercise were forgotten and "machine therapy" was rapidly becoming the vogue. The sale of machines was not limited to the medical profession. Often, under different trade names, the same machine was sold to various cults, to beauty parlors, to athletic clubs and even to barber shops. Articles from the pens of faddists and enthusiasts both in and out of the profession began to flood the medical journals and other periodicals. Not satisfied with their triumphs thus far, these manufacturers began to advertise their machines directly to the public and many were the unwarranted therapeutic claims made for their use in every known disease. Dr. Joseph F. Smith of Wisconsin, realizing with many others of the profession this deplorable condition, brought a resolution before the House of Delegates of the American Medical Association in Atlantic City in May, 1925, urging the Board of Trustees to establish the Council on Physical Therapy. The resolution was adopted. The Council began to function in January 1926.

The Council early decided that the best means of controlling the advertising claims and sale of physical therapy apparatus was to publish after thorough investigation a list of apparatus "Acceptable to the Council" and a list of apparatus "Rejected by the Council." The Council has found it necessary to spend months and in a few instances years in the investigation of certain apparatus or in directing scientific studies of the therapeutic agency common to many machines manufactured by several different concerns.

There are two distinct types of physical therapy: first, that which must be administered by the physician or a trained technician, by the intelligent use of the hands and simple appliances plus the active cooperation of the patient; second, that which requires machines or special apparatus to administer. The chief physical therapy procedures in this first group are massage, heat, exercise, including muscle training and joint reeducation, a few simple mechanical appliances, and occupational therapy. The committees of the Council have made thorough studies of all these methods and have published reports concerning them. In spite of this fact, too many hospitals and too many physicians still think of physical therapy only in terms of "machine therapy." The Council wishes to emphasize again that approximately 90 per cent of the cases requiring physical therapy in the hands of the average practitioner fall in this group. The second group, or that form of physical therapy which requires special apparatus to administer, includes radiation, electrotherapeutics, the more complicated heat developing machines, inhalation therapy, which includes oxygen therapy, air purifiers, anesthetic machines and respirators, certain hydrotherapy equipment and similar apparatus for the administration of physical therapy.

The studies and investigations of the Council have proved that the majority of all these special appliances have definite therapeutic value. This fact should be recognized by the profession and these methods used when definitely indicated. The Council does feel, however, that the majority of these pro-

cedures helong in the hands of the specialist in physical therapy or require special training on the part of the physician before he can give adequate therapeutic value to the patient receiving these forms of treatment.

It is to this second large group of physical therapy modalities that the Council has been forced to devote a great deal of its time. It is in this group that a great many exaggerated therapeutic claims have been made, both by the profession and by manufacturers. It has been necessary to prove or disprove these claims scientifically before the majority of these machines or even the therapeutic modality could be approved and accepted. It is at once obvious that the great majority of these claims have not withstood controlled scientific experimentation. It is likewise obvious that no scientific method has as yet been evolved to prove certain therapeutic results which have been obtained by many clinicians with certain modalities. To evaluate properly all this material and to arrive at conclusions without inflicting serious hardships on certain manufacturers and without disrupting the advertising departments of many of our professional and lay journals has been a gigantic task. Many of these problems are still being wrestled with. In order to facilitate this angle of the work, special committees composed of Council members, often assisted by clinicians, physiologists, physicists and others who have been invited to contribute their services, have been formed.

The Committee on Radiation has dealt especially with ultraviolet radiation, x-rays, radium and radon, infra-red lamps, and all the various substitutes for window glass made for the purpose of transmitting the ultraviolet rays from sunlight. After approximately five years of clinical and scientific investigation, it was determined that the only conditions in which the Council could recognize real therapeutic value from ultraviolet radiation was in its prophylactic and curative effect on rickets, infantile tetany or spasmophilia and osteomalacia. General irradiation of the nude body of the expectant or nursing mother most probably has a definite preventive effect against rickets and other calcium deficiencies. Ultraviolet radiation may also exert a beneficial action on other disorders of calcium metabolism; but the limits of such action, the conditions under which it may be produced and the specific influence of the rays have not as yet been fully explored and specified. There is good clinical evidence that benefit is derived by patients suffering from tuberculosis of bones, joints, the intestine, larynx and lymph nodes, when exposed to natural sunlight or to rays emitted by certain artificial sources of radiation, but the precise rôle of ultraviolet rays in such action has not been clearly determined. As far as normal persons are concerned, the claim that exposure to ultraviolet rays increases or improves the tone of the tissues or of the body as a whole, stimulates metabolism or tends to prevent colds has not been conclusively substantiated. Certainly there is no evidence of these rays having any special beautifying effects. In certain dermatoses and cutaneous disorders, ultraviolet rays have a definite benefit.

Radium and radon have likewise been investigated and a report on this subject has been published. The Council has felt for some time that certain physicians and radium laboratories have not sufficiently controlled the rental of their products to physicians for use on their patients. It is hoped that, by educational methods or otherwise, certain of the inadequacies and dangers of advertising and renting radium and radon will be eliminated.

During the last seven years the Council has been investigating all kinds of diathermy machines and has made an extensive study of many of the therapeutic claims made for diathermy. In the case of so-called medical diathermy, the Council definitely agrees that this is an excellent method of producing heat and that this form of heat can be used to advantage in many conditions. It is convinced that this distribution of heat to a given area inside the body cannot be controlled to the extent that was formerly believed, owing to the action of the blood stream and other body influences on the distribution of heat. The Council therefore has been slow to accept therapeutic claims for medical diathermy other than those which can be accomplished by many simpler methods of administering heat. It may be necessary to change this attitude as further investigation progresses.

Electrosurgery, or surgical diathermy, has been investigated. The Council has taken the stand that the indications and uses

of electrosurgery will best become known through clinical experience and scientific investigation on the part of the profession, rather than through high pressure advertising and so-called clinics held by manufacturers of these machines. Within the last year the Council has called the attention of the manufacturers of such machines to the inadvisability and non-necessity of holding clinics for the advertising and sale of their electrosurgery machines. Outstanding men in the profession have already demonstrated that electrosurgery has its place in many malignant conditions of the skin, breast, cervix and even of the deeper glands and organs; in selected cases for tonsillectomy; in certain forms of rectal surgery, especially hemorrhoidectomy, and in a number of other conditions.

Through its committee on education, the Council has endeavored to develop methods of teaching physical therapy in both the undergraduate and the postgraduate courses to physicians. It has published reports setting forth minimum standards for courses in physical therapy both in medical schools and in courses given to technicians. The Council has furnished speakers to several county, district and state medical meetings for addresses on various subjects in physical therapy.

The Handbook of Physical Therapy, published by the American Medical Association two years ago, contains forty-eight articles and committee reports, which are of inestimable value as an educational medium to the profession.

The Council has had a fund, made available by the American Medical Association, for use in aid of research, bearing on physical therapy. By means of this, the Council has stimulated certain research studies which have been of real value to the Council in its work and to the profession as a whole. Application for a grant from the Council to be used in carrying out scientific investigations on problems of physical therapy may be made to the secretary of the Council on Physical Therapy of the American Medical Association.

This outline of the work of the Council on Physical Therapy illustrates a few of its problems and the progress it has made in the solution of some of these problems.

DISCUSSION

DR. E. W. RYERSON, Chicago: The work that the Council on Physical Therapy has been doing is amazing when one realizes all of the ramifications that surround it. It is almost too much to expect of a council, and yet it is one of the most valuable commissions that we can possibly conceive of. The great lesson to be learned from these two papers is that the simplest forms of physical therapy are, without exception, the best. What objections can there be to the use of physical therapy by all the hospitals? There is only one objection that I can see, and that is the expense, because this work must in every case be individual; to be of any value, it can be done only by the daily assiduous use of individual work. That is expensive, and what is needed in hospitals is sufficient endowment to allow this work to be done. It is evident that at present the facilities at any hospital cannot be enlarged. The simple things can be done in most cases by nurses who are trained under the supervision of a specialist in this line, and those can be taught later to the patient's relatives when he goes home. Years ago I went into several of the great foreign clinics where there were enormous rooms with machinery in them. They would strap a patient in and pull a switch. What is done to the patient? Nothing. Those mechanical things cannot be used without a brain behind them. In its last analysis, it is not the machinery that we use, but the brains.

DR. J. S. COULTER, Chicago: I should like to see Dr. Gaenslen's paper go to every member of every medical school faculty in the United States. He brought out that every teacher in the medical school should bring before his students the value of physical therapy. That is really the greatest problem that the Council on Physical Therapy has. I think that when we can get every physician educated to use these simple methods, physical therapy will be where it should be, and not until then.

DR. C. W. MUNGER, Valhalla, N. Y.: I should like to ask whether there have been any qualifications established for technicians.

DR. MOCK: There has been a set of standards for the education of technicians published. I want to say for the technicians

that the majority of them are greatly in advance of physicians. The technicians are doing a great deal toward educating the physicians.

DR. MUNGER: Should there be any different requirements for the treatment of poliomyelitis?

DR. MOCK: Technicians recognize that there are certain specialties. I think the treatment of poliomyelitis is one. The technicians have been excellently trained for the treatment of that condition. The medical profession owes what it has in physical therapy to Dr. Ireland. Its growth is largely due to the cooperation of Dr. Ireland when he was Surgeon General of the Army.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

State Medical Election.—Dr. James R. Garber, Birmingham, was chosen president of the Alabama Medical Association at its recent annual meeting in Montgomery, succeeding Dr. Samuel Kirkpatrick, Selma. Dr. Alvin B. Coxwell, Monroeville, was selected vice president, and Dr. Jacob U. Ray, Woodstock, treasurer. Birmingham was designated as the place for the 1934 session of the association. At the final session, an order was issued by the association for the curtailment of the state health department. This action, made necessary by insufficient funds, will result in the release of at least two thirds of the ninety-six employees, newspapers reported. Shortly before this order was given, a resolution had been adopted urging the governor and legislature to use "all reasonable ways and means to promote the welfare and continue the health work of its citizens through their health department." According to one report, all services of the department are to be discontinued except those embraced by police regulations, such as supervision of milk and water supplies of towns and cities. Those abandoned will include the tuberculosis clinics, nursing bureau and oral hygiene division. The order has already been put into effect.

COLORADO

Bill Enacted.—H. 335 has become a law, amending the nursing practice act so as (1) to require applicants for licenses to practice professional nursing to be graduates of accredited high schools and of approved training schools for nurses, requiring at least three years' training, and (2) to require all licentiates to pay an annual registration fee of \$1.

Society News.—Dr. William A. Campbell, Jr., Colorado Springs, among others, addressed the Medical Society of the City and County of Denver, April 18, on "Carcinoma of the Breast with Metastasis, Including Metastasis to the Heart." The University of Colorado Medical School and Hospitals presented the program, April 4. Among others, Dr. Frank E. Rogers spoke on "Perforated Peptic Ulcer."—The Boulder County Medical Society was addressed, April 13, in Longmont, among others, by Drs. James A. Matlack, Longmont, on "Lesions of the Colon"; Myron W. Cooke, "Brain Abscess," and Clarence W. Bixler, Erie, "Lymphatic Leukemia."

CONNECTICUT

Bill Passed.—S. 259 has passed the house and the senate, permitting any practitioner of the healing art who has retired from active practice to resume practice if he notifies the state department of health in writing of his intention and pays the registration fee of \$2.

Annual Meeting.—Dr. Wilder G. Penfield, clinical professor of neurology and neurosurgery, McGill University Faculty of Medicine, Montreal, was the guest speaker at the one hundred and forty-first annual meeting of the Hartford County Medical Association in Hartford, April 4. His subject was "The Evidence of a Cerebral Vascular Mechanism in Epilepsy." Other speakers were Drs. Walter L. Hogan and Henry F. Stoll on "Quinine Urea Anesthesia in Tonsillectomy" and "Relevancy of the Apparently Irrelevant," respectively.

FLORIDA

Bills Introduced.—S. 107 proposes to create a board of beauty culture examiners and to regulate the practice of beauty culture. Licentiates, apparently, are to be permitted to remove superfluous hair by electrolysis and by the use of devices and appliances of any kind or description, but not to use "light waves," commonly known as "rays." S. 263 proposes to repeal the law regulating the practice of optometry. H. 219, to amend the optometry practice act, proposes to define optometry as "the employment of any objective or subjective means or methods without drugs or surgery for the purpose of determining the reflective [sic] powers of the human eyes, or any visular [sic] or muscular anomalies of the human eye and its appendages, and the prescribing and the employment of lenses, prisms, ocular exercises for the correction, remedy or relief of any insufficiencies or abnormal conditions of the same." It proposes to make it unlawful for any person not licensed under the act to practice optometry as defined in the act, except that "duly qualified ophthalmologists" are to be permitted to do so. H. 221 proposes to make the incurable insanity or narcotic addiction of either spouse a cause for divorce. H. 270 proposes to make it unlawful for any practicing dentist "to use a dental hand piece (sometimes called a dental engine) or other tools or other instruments in the mouth of a patient without the same having been sterilized by boiling to a degree of 212 fahrenheit, for a period of sixty minutes, unless the same shall have been otherwise sterilized by a competent disinfectant." H. 534 proposes to authorize the state board of health to furnish insulin to indigent citizens of the state. H. 563 and S. 329 propose to repeal the laws regulating the possession and sale or other distribution of narcotic drugs and to enact the uniform narcotic drug act.

GEORGIA

Commemorate Discovery of Ether Anesthesia.—The observance of Crawford W. Long Day at the University of Georgia, March 30, marked the ninetieth anniversary of the discovery of ether anesthesia. Dr. Allen H. Bunce, Atlanta, gave an address on "The Practice of Medicine as a Career." The exercises at the university were dedicated to the memory of Dr. Long, a graduate of the institution.

Society News.—Dr. Hulett H. Askew gave a paper before the Fulton County Medical Society, Atlanta, March 16, on "Injection Treatment of Hemorrhoids." Dr. Benjamin T. Beasley gave a talk on "Interrelationship of the Female Sex Hormones in Functional Menstrual Disorders." Dr. Frank Lee Bivings, Atlanta, gave a paper before the society, March 2, on "Preconceptional and Prenatal Influences Affecting the New-Born," and Dr. John W. Turner, Atlanta, April 20, on acute intestinal obstruction.—Speakers before the Troup County Medical Society, February 23, were Drs. Milus K. Bailey, Atlanta, and Enoch Callaway, La Grange, on "Infections in the Kidney and Ureter" and "Removal of Tonsils in Tuberculous Children," respectively.

IDAHO

Society News.—Speakers before recent meetings of the Southside Medical Society at Burley and Twin Falls included Drs. Roger S. Anderson, Seattle, on fractures of the leg; Richard P. Howard, Pocatello, coronary occlusion; Corwin P. Groom, Pocatello, diagnosis of clinical myocarditis, and George C. Halley, Twin Falls, medical economics.

ILLINOIS

Luther E. Howell Sentenced.—After an investigation by the Department of Registration and Education, a warrant was issued against Luther E. Howell, Belleville, for practicing medicine without a license. At a hearing, April 10, Howell was fined \$250 and sentenced to ninety days on the state penal farm at Vandalia.

Bills Introduced.—S. 520 proposes extensive amendments to the Illinois dental practice act. It exempts from the operation of the act "the rendering of dental relief in emergency cases in the practice of his profession by a physician or surgeon, licensed as such and registered under the laws of this state, unless he undertakes to reproduce or reproduces lost parts of the human teeth in the mouth or to restore or replace in the human mouth lost or missing teeth." S. 530 and H. 725 propose to impose on physicians annual license taxes amounting to 1.5 per cent of their gross incomes. S. 542 and S. 543 propose to create a board of naturopathic examiners and to regulate the practice of naturopathy. Naturopathy is defined as "the treatment of diseases such as
mechanotherapy,
gymnastics, bacte
tive orthopedic
psychotherapy,

hydrotherapy, and Mineral Baths, electro-therapy, thermotherapy, phototherapy, chromotherapy, vibrotherapy, chiropractic, osteopathy, orificial surgery, obstetrics, naprothy, spondylopractic, thalmotherapy and Bio-chemistry which shall include the use of foods of such biochemical tissue-building products and cell salts as are found in the normal body; and the use of vegetal oils and dehydrated and pulverized fruits, flowers, seeds, barks, herbs, roots and vegetables, uncompounded and in their natural state."

Chicago

Dr. Ewing Gives Billings Lecture.—Dr. James Ewing, professor of oncology, Cornell University Medical College, and director, Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York, will deliver the second Frank Billings Lecture of the Thomas Lewis Gilmer Foundation of the Institute of Medicine of Chicago, May 26. Dr. Ewing's subject will be "The Depression: Its Effects on Medicine, Research and Practice."

Radiation Institute to Be Dedicated.—The dedication of the building and 1,000,000 volt transformer of the Mercy Hospital Institute of Radiation Therapy will take place, May 11. Addresses will be given by Rev. Robert M. Kelley, S.J., president, Loyola University; Dr. Jennings C. Litzenberg, University of Minnesota Medical School, Minneapolis; William D. Coolidge, D.Sc., director of research laboratory, General Electric Company, Schenectady, N. Y.; Dr. Herman L. Kretschmer, president, Chicago Medical Society, and Dr. Louis D. Moorhead, dean, Loyola University School of Medicine.

University News.—Medical students are to be admitted once a year beginning with the autumn quarter, 1933, according to the *Neus Bulletin* of the Division of Biological Sciences, University of Chicago. Heretofore, medical students have been admitted during each quarter.—More than \$100,000 has been bequeathed to the University of Chicago for the treatment of crippled children, by the will of the late Mrs. Gertrude Dunn Hicks. In 1927, Mrs. Hicks gave the university \$300,000 for the construction of the Gertrude Dunn Hicks Memorial Hospital for Crippled Children, in which fifty beds are available for children whose families are unable to provide medical care. It is planned to hold the principal of the recent gift in trust for ten years. The aggregate income then will be placed in trust to provide a fund for the operation of the hospital, the principal to become the property of the university outright.

INDIANA

University News.—A recent service report for 1932 showed that three Indiana University hospitals had 13,001 patients as compared with 12,189 the previous year. Of this number, 8,606 were bed patients and 4,393 were outpatients. The James Whitcomb Riley Hospital for Children led in numbers with 5,169 patients; the Robert W. Long Hospital was next with 4,159 and the William H. Coleman Hospital for Women, 3,673. Nine hundred and thirty-one births were recorded at the Coleman hospital during the year.

Society News.—Dr. Leon G. Zerfas, Indianapolis, spoke on pneumonia before the Madison County Medical Society in Anderson, February 20.—Dr. James D. Bisgard, Ann Arbor, spoke before the Elkhart County Medical Society, Elkhart, March 2, on "Arthritis of the Spine."—Dr. Melvin G. Yocum, Mentone, addressed the Kosciusko County Medical Society in Mentone, April 11, on "Forty Years in the Practice of Medicine."—At a meeting of the Marshall County Medical Society, Plymouth, April 5, Dr. Louis E. How, Lakeville, spoke on genetics.—The Hamilton County Medical Society was addressed at Sheridan, April 11, by Dr. Reuben A. Solomon, Indianapolis, on "Therapeutics of Cardiovascular Renal Disease."—Dr. Edward L. Cornell, Chicago, conducted a clinic on obstetrics before the Tippecanoe County Medical Society in La Fayette, April 13.—Dr. William P. Gillespie, Cincinnati, directed an obstetric seminar before the Wayne-Union County Medical Society in Richmond, April 13.—Dr. Homer H. Wheeler, Indianapolis, addressed the Hancock County Medical Society at Greenfield, March 10, on "Hemorrhoids and Their Treatment."—At a meeting of the Randolph County Medical Society in Winchester, March 13, Dr. Leland K. Phipps, Union City, spoke on "Tumors of the Genito-Urinary Tract."—Dr. Edgar F. Kiser, Indianapolis, discussed the senile heart before the Cass County Medical Society in Logansport, March 17.—"Congenital Syphilis" was the subject of an address given by Dr. Frank W. Cregor, Indianapolis, before the Bartholomew County Medical Society in Columbus, March 15.—Dr. Joseph C. Bloodgood, Baltimore, addressed the Lake County Medical Society in Hammond, April 27, on prevention and treatment of cancer.

IOWA

Society News.—A symposium on biliary tract disease constituted the meeting of the Crawford County Medical Society, February 14, in Denison; speakers were Drs. William D. Runyon, Sioux City, Herbert H. Davis, Omaha, and George M. Higgins, Ph.D., Rochester, Minn.—At a meeting of the Hamilton County Medical Society in Webster City, February 14, Dr. Guy B. Anderson, Ackley, gave a paper on "Office Treatment of Rectal Fissure."—The Wapello County Medical Society was addressed, February 21, by Dr. Carl G. Bishop, Ottumwa, on "Endocrine Disturbances Caused by Pathologic Conditions of the Body."—Dr. Robert O. Hughes, Ottumwa, held a pediatric clinic at this meeting.—Dr. Arno B. Luckhardt, Chicago, addressed the Clinton County Medical Society, April 6, on "Recent Advances in Endocrinology."—Drs. Francis R. Holbrook and Harry A. Collins will address the Des Moines Academy of Medicine and the Polk County Medical Society, May 23, on the heart.—Dr. Richard L. Sutton, Kansas City, will conduct a skin clinic before the Linn County Medical Society, May 18; Dr. Sutton will also address the society on his trip through the arctic last summer.

LOUISIANA

Society News.—Dr. George F. McCleary, retired medical officer of the Ministry of Health, London, England, gave a public address at the Hutchinson Memorial Clinic, March 9, on "Trends in Medical Practice."—At a meeting of the Orleans Parish Medical Society, April 10, the speakers included Drs. Alfred A. Keller on "Surgical Parotitis with Report of a Case Complicating Tonsillectomy"; Roy E. de la Houssaye, "Diagnosis and Treatment of the Enlarged Thymus," and Michael E. DeBakey and William H. Gillentine, "A New Syringe Method for Blood Transfusion."—A recent meeting of the Tangipahoa Parish Medical Society was addressed by Dr. Joseph N. Roussel, New Orleans, on skin diseases.—Speakers before the Sixth District Medical Society in Baton Rouge, March 30, included Drs. Arthur A. Herold, Shreveport, on advances in the study of diabetes mellitus; James Q. Graves, Monroe, peritoneal adhesions, and Sidney C. Barrow, Shreveport, superficial radiation therapy.—At a joint meeting of the Orleans Parish Medical Society and the New Orleans Gynecological and Obstetrical Society, March 13, Dr. Martha M. Eliot, New Haven, Conn., spoke on infant mortality in New Orleans, and Dr. James R. McCord, Atlanta, Ga., New Orleans' maternal mortality.—The Seventh District Louisiana Medical Society heard discussions at its meeting, March 2, among others, by Drs. Seaborn J. Lewis, Beaumont, Texas, on endemic typhus fever in Louisiana and Texas, and George Herrmann, Galveston, current conceptions and treatment of heart disease.

MAINE

Society News.—Dr. Harold Rypins, Albany, N. Y., spoke before the Cumberland County Medical Society, February 24, on "Medical Legislation and Cult Recognition."—At a meeting of the Portland Medical Club, March 7, Dr. John R. Hamel gave an address on "Clinical Interpretations of Irregularities of the Heart Beat."

MARYLAND

State Medical Election.—At the annual meeting of the Medical and Chirurgical Faculty of Maryland, April 25-26, in Baltimore, the following officers were elected: Dr. George O. Sharrett, Cumberland, president, to succeed Dr. Joseph Albert Chatard next January; Drs. George C. Lockard, Baltimore; William R. White, Ellicott City, and John L. Riley, Snow Hill, vice presidents. Other officers of the faculty were reelected.

Another Full Time County Health Department.—With the appointment of Dr. David T. Bowden, Jr., as health officer, St. Mary's County began to function as a full time health unit in January. Caroline County is now the only part time health unit in the state. More than 840,000 of the 860,000 people living in the counties of Maryland, or 98 per cent of the total population of the counties, have such service, the state health department reported.

Industrial Hygiene Service.—A training school in industrial hygiene was inaugurated in Baltimore, February 28, as a joint project of the state commissioner of labor and statistics, Dr. J. Knox Insley, and the Baltimore Health Department. Lectures are being given over a two months period to the inspectors of both departments who will be engaged in the new work. The creation of a new classification of inspectors of industrial hygiene as a part of the personnel for the recently created bureau of environmental hygiene of the health department has been approved. Industrial establishments in

the city will be surveyed, and problems in industry, such as high relative humidities, proper ventilation and illumination, adequate removal of dusts, the need for protective devices, and the availability of sanitary facilities will be studied. The basis of the new service is chiefly educational, Baltimore *Health News* stated.

MASSACHUSETTS

Bill Enacted.—S. 386 has become a law, authorizing a physician registered as an intern to practice medicine, not only in the hospital or other institution designated on his certificate, but also outside of such hospital or institution, in the treatment of its patients, under the supervision of a duly registered physician serving as the medical officer of such hospital or institution and under regulations made by it.

Society News.—Dr. Ernest Granville Crabtree, Boston, was reelected president of the Massachusetts Society for Social Hygiene, April 10.—Dr. Martin E. Rehfuess, Philadelphia, will address the William Harvey Society of Tufts Medical School, May 12, on "Diseases of the Stomach." Dr. Ralph Pemberton, Philadelphia, and Dr. Robert B. Osgood, Boston, addressed the society, April 14, on "Control of Arthritis."

MICHIGAN

Personal.—Dr. Walter Johnston Cree, Detroit, was guest of honor at a luncheon, April 17, given by the Senior Club of the Wayne County Medical Society, in recognition of his completion of fifty years in the practice of medicine.—Dr. Floyd H. Lashmet, Ann Arbor, has been promoted to assistant professor of internal medicine at the University of Michigan School of Medicine, Ann Arbor. Dr. Franklin G. Lindenunder has resigned as instructor in neurology at the school, effective May 1; he will be succeeded by Dr. Robert Milligan.—Dr. Hugh Harrison has occupied the same office at 3505 East Forest Avenue, Detroit, since March 24, 1896, the *Bulletin* of the Wayne County Medical Society states.—Dr. Daniel J. O'Brien, Lapeer, was elected mayor of the city, April 5. Dr. O'Brien, who is 50 years old, is a graduate of Detroit College of Medicine and Surgery.

MISSISSIPPI

State Medical Meeting at Jackson, May 9-11.—The sixty-sixth annual session of the Mississippi State Medical Association will be held at the Robert E. Lee Hotel, Jackson, May 9-11, under the presidency of Dr. James M. Acker, Jr., Aberdeen. The program will include the following physicians as speakers:

Lucious W. Brock, McComb, Heart Disease: Incidence, Cause and Treatment of Some of the Common Types.
John H. Musser, New Orleans, Considerations of the Several Important Etiologic Types of Heart Disease.
Laurance J. Clark, Vicksburg, Prognosis in Coronary Disease.
Frank L. Van Alstine, Jackson, Urinary Antiseptics.
William A. Dearman, Gulfport, The Question of Prognosis.
Franklin G. Riley, Meridian, Asphyxia Neonatorum.
George Y. Gillespie, Jr., Greenwood, Neuritis Complicating Pregnancy.
William L. Stallworth, Columbus, Climacteric Hypertension.
Leon J. Menville, New Orleans, The Early Diagnosis of Pulmonary Tuberculosis.
Henry G. McCormick, Laurel, Dermatophytosis of Extremities: Its Treatment by X-Ray Therapy.
J. Rice Williams, Houston, subject not announced.
Russell A. Hennessy, Memphis, Newer Methods in the Treatment of Prostatic Obstructions.
Andrew G. Payne, Greenville, Intestinal Obstruction.
Richard J. Field, Centerville, Treatment of Chronic Osteomyelitis with Live Maggots.
Wade H. Sutherland, Booneville, Chronic Peptic Ulcer.
Martin L. Flynt, Newton, Surgical Aspects of Obstetrics.
Homer A. Whittington, Natchez, Spinal Anesthesia.
William F. Hand, Jackson, Cervical Obstructions.
Monteville Q. Ewing, Armory, Carcinoma of the Colon.
Edley H. Jones, Vicksburg, Clinical Observations on Allergy from the Otolaryngological Viewpoint.
John R. Hume, New Orleans, Evaluation of the Symptoms of Chronic Aural Suppuration.
Lucien S. Gaudet, Natchez, Diagnosis and Treatment of Acute Sinusitis.
George E. Adkins, Jackson, Nasal Obstruction: Causes, Diagnosis and Treatment.
Daniel C. Montgomery, Greenville, Spontaneous Epistaxis.
Billy S. Guyton, Oxford, Tuberculous Iritis.
Ellis LeRoy Wilkins, Clarksdale, Acute Conjunctivitis: Diagnosis and Treatment.
Melbourne L. Batson, Jackson, Cataract: Senile and Traumatic.
Alvin E. Keller, Nashville, The Practicing Physician in the Control of Tuberculosis.
Harvey F. Garrison, Jr., Jackson, Use of Convalescent Serum in the Prevention and Attenuation of Measles.
Grover C. Terrell, Prentiss, Prevention of Heart Disease Due to Contagion.
Theodore W. Kemmerer, Jackson, Use of the Laboratory in the Prevention of Disease—A Discussion of the Factors Which Determine the Value of Laboratory Work.

Dr. Arthur C. Christie, Washington, D. C., will address a special session, Wednesday evening, on "Costs of Medical Care—Some Aspects of the Committee's Report." A round table discussion will follow this talk. Dr. William A. Evans, Chicago, will deliver the annual oration, Tuesday evening. The Mississippi State Hospital Association will hold its fourth annual meeting at the Edwards Hotel, Jackson, May 8. Dr. Bert W. Caldwell, Chicago, executive secretary, American Hospital Association, will be the speaker at the annual banquet.

MISSOURI

Bill Enacted.—H. 664 has become a law, making it lawful for licensed physicians to prescribe intoxicating liquors in such quantities and with such frequency and dosage as in their judgment the needs of their patients require.

Second Graduate Series.—The Kansas City General Hospital conducted its second graduate course, March 27-April 1. Medicine was the theme of the second series, while obstetrics formed the basis for the first, which began February 20.

University Opens Affiliated Unit.—The \$2,000,000 Firmin Desloge Hospital, St. Louis, which opened its doors, February 3, is the newest addition to the group of institutions affiliated with the St. Louis University School of Medicine, according to the *Journal of the Missouri Medical Association*. It was made possible through bequests of the late Firmin Desloge and the Desloge family. The building is thirteen stories high with a bed capacity of 238. Not only will it serve as a training unit for the undergraduate student, but special facilities have been provided for graduate courses in all departments. A sliding scale of charges ranging from free patients to those in moderate circumstances will be used. Before admission, patients will be examined as to financial status in addition to the medical investigation. The hospital is operated by the Sisters of St. Mary in association with the school of medicine. Dr. Ralph A. Kinsella is chief of staff and director of the department of internal medicine at the Firmin Desloge Hospital.

NEBRASKA

Bill Enacted.—S. 126 has become a law, amending the medical practice act by removing the present three year time limit within which a licentiate who has allowed his license to lapse by failure to register annually must make application for reinstatement. It provides also that an applicant for a license by reciprocity may, in lieu of the evidence of actual practice now required, show that he has served an internship of one year in an accredited hospital.

NEW HAMPSHIRE

Bills Enacted.—The following bills have become laws: H. 286, amending the pharmacy practice act, by providing a penalty for maintaining a pharmacy, unless the owner is a registered pharmacist or employs a registered pharmacist to supervise it; H. 122, amending the chiroprody practice act, by (1) defining a chiroprodist as "one who examines, diagnoses, or treats medically, mechanically or surgically the ailments of the human foot, except the amputation of the toes or foot, or the use of anesthetics other than local," and (2) repealing the requirement in the present act that an applicant for a license have a high school education in addition to having been graduated by a recognized college of chiroprody.

NEW JERSEY

Society News.—Dr. Seth A. Brumm, Philadelphia, addressed a combined meeting of the Camden County Medical Society and the Fourth Tri-Councilor District Medical Society, Camden, April 4, on "What of the Doctor's Economic Future?"—Dr. John A. Hartwell, New York, addressed the Bergen County Medical Society, Hackensack, April 11, on the reports of the Committee on the Costs of Medical Care.—Dr. Arthur C. Morgan, Philadelphia, discussed the reports of the Committee on the Costs of Medical Care before the Monmouth County Medical Society, Asbury Park, March 29.—The Ocean County Medical Society recently appointed a board to pass on the qualifications of specialists in accordance with the plan proposed by the Medical Society of New Jersey at its annual session in 1932.—At a meeting of the Passaic County Medical Society, April 13, physicians from the staff of Memorial Hospital, New York, presented the following program: Drs. Burton J. Lee, on "End-Results in Treatment of Carcinoma of the Breast"; Lloyd F. Craver, "Diagnosis and Treatment of Tumors of the Lymphoid System," and George T. Pack, "Diagnosis and Treatment of Carcinoma of the Stomach."

NEW YORK

Society News.—Dr. Nathan B. Van Etten, New York, addressed the Medical Society of the County of Monroe, Rochester, March 21, on medical economic questions.—Speakers at the April quarterly meeting of the Ontario County Medical Society at Clifton Springs Sanitarium were Drs. Adrian S. Taylor, Clifton Springs, on "Diseases of the Thyroid"; William C. Eikner, "Surgical Treatment of Prostatic Hypertrophy," and Walter S. Thomas, Clifton Springs, "Hormone Tests for Pregnancy."—Dr. Karl Winfield Ney, New York, addressed the Schenectady County Medical Society, in March, on "Epilepsy—A Mechanical Theory and Results of Treatment."—A symposium on physical therapy was presented at a meeting of the Medical Society of the County of Nassau, Mineola, April 25, by Drs. Richard Kovacs, Norman E. Titus and William Bierman, all of New York, and Harry E. Stewart, New Haven, Conn. Speakers at a meeting, March 28, were Alexander O. Gettler, Ph.D., New York, and Mr. Lloyd Paul Striker, former counsel of the Medical Society of the State of New York, on "The Diagnosis of Intoxication" and "A Professional Man in a Republic," respectively.—A symposium on intestinal obstruction was presented at a meeting of the Onondaga County Medical Society, Syracuse, March 7, by Drs. Albert G. Swift, Foster C. Rulison, Robert K. Brewer, Arthur B. Raffl, Percival K. Menzies and John C. Frey.

New York City

Lectures by Dr. Grant.—A series of lectures on heart disease will be given by Dr. Ronald T. Grant of University College Hospital Medical School, London, England, during the week of May 15. The schedule is as follows:

Monday, Correlation Between	Autopsy Findings
in Heart Disease, at Bel	School.
Tuesday, Prognosis of Heart	Academy of Medicine.
Wednesday, Arteriovenous	Skin, Beth Israel
Hospital.	
Thursday, Observations on the Coronary Vessels, College of Physicians and Surgeons, Columbia University.	
Friday, Observations on Syphilitic Heart Disease, Cornell Medical College.	

Society News.—The section on otolaryngology of the College of Physicians of Philadelphia met with the section on otolaryngology of the New York Academy of Medicine, April 17. Papers were presented by Drs. Ralph Almour, on "Evolution of the Mastoid Tip Cell"; Page O. Northington, "Functional Ear Examination in Patients with Ménière's Syndrome"; Isaac Seth Hirsch, "Diagnostic and Therapeutic Use of the Roentgen Ray in Laryngeal Neoplasms" and Paul Reznikoff, "Neutropenia." Drs. Oscar V. Batson, George M. Coates, Fielding O. Lewis and Karl M. Houser, Philadelphia, discussed the papers. Dr. Nathaniel G. Alcock, Iowa City, addressed the section on genito-urinary surgery, April 19, on transurethral prostatic resection and Dr. Edward L. Compere, Jr., Chicago, the section on orthopedic surgery, April 21, on "Calcium and Phosphorus Metabolism and Its Relation to the Parathyroid Glands."—Drs. John H. Wyckoff, Jr., Arthur C. De Graff and Clarence E. de la Chapelle presented a discussion of arteriosclerotic heart disease at a meeting of the Association of Italian Physicians in America, March 20.—Dr. William F. Braasch, Rochester, Minn., presented a paper on "Transplantation of the Ureters to the Sigmoid Colon for Extrophy and Other Abnormalities of the Bladder and Urethra," before the New York Society of the American Urological Association, March 22.—Drs. Anthony Bassler and Albert F. R. Andresen addressed the Society for the Advancement of Gastro-Enterology, March 22, on "Pancreas and Angina Pectoris" and "Gastro-Intestinal Manifestations in Food Allergy," respectively.

NORTH CAROLINA

University News.—Dr. Thomas M. Rivers, New York, gave an address at Duke University School of Medicine, Durham, March 10, on "Filtrable Viruses in Relation to the Practice of Medicine," and Dr. Byrd C. Willis, Rocky Mount, March 14, on "Perforated Wounds of the Abdomen."

New Health Officers.—Appointments of new county health officers have recently been announced as follows: Drs. David E. Ford, New Bern, Beaufort County; Lester P. Martin, Mocksville, Davie County; Stephen Glenn Wilson, Clinton, Sampson County, reelected, and George E. Newby, Hertford, Perquimans County.

In Memory of Dr. Shore.—The state legislature recently ratified a resolution designating the building occupied by the state laboratory of hygiene in Raleigh as the Clarence A. Shore State Laboratory of Hygiene Building, in memory of the late Dr. Clarence A. Shore, director of the laboratory for twenty-five years. Dr. Shore died, February 10.

Bills Introduced.—H. 1240 proposes to make it a misdemeanor for any person, knowingly or through failure to exercise every possible care, to communicate a venereal disease. In prosecutions under the act, any licensed physician or any hospital consulted relative to diagnosis or treatment can be required to testify under oath regarding the case. H. 1284, to amend the workmen's compensation act, proposes to permit an employee injured in an industrial accident to select at his employer's expense a physician of his own choice.

OHIO

Plan for Admissions to Free Dispensaries.—The Cincinnati Academy of Medicine at a meeting, April 3, adopted a plan for controlling admission to free dispensaries. Each patient who applies to a free clinic for treatment will be sent to his family physician or, if he has no family physician, to a physician in his neighborhood, with a card. If the physician wishes to care for the patient, he will do so and return the card to the clinic. If not, he signs the card and sends the patient back to the clinic. It was said that the plan would be tried at the outpatient department of the Cincinnati General Hospital, where patients are said to be applying for aid at the rate of nearly 25,000 a year.

PENNSYLVANIA

Bill Introduced.—S. 1344, to amend the nursing practice act, proposes that any person of good moral character who has had twenty-five years or more of practice as a nurse shall be eligible for examination as a registered nurse.

Society News.—The R. W. Stewart Memorial Lecture of the Pittsburgh Academy of Medicine was delivered, April 21, by Dr. James Ewing, New York; his subject was "Recent Results of Cancer Research."—Drs. Samuel I. Lebeau and George V. Foster addressed the Pittsburgh Pediatric Society, April 14, on "Torsion of Tubo-Ovarian Pedicle in a Child of 5 Years" and "The Acute Abdomen in Childhood," respectively. Dr. Robert A. Knox, Washington, reported two cases of brain tumor.—Dr. Edward S. Thorpe, Jr., Philadelphia, addressed the Schuylkill County Medical Society, Pottsville, April 11, on "Simplified Infant Feeding and Management of Severe Diarrhea."—Dr. James F. Mitchell, Washington, D. C., addressed the Cambria County Medical Society, Johnstown, April 13, on duodenal ulcer.

Philadelphia

Hospital News.—Dr. Joseph Colt Bloodgood, Baltimore, addressed the staff of Jeanes Hospital, March 21, on "Physical Agents in the Surgical Treatment of Malignancy."—Ground was broken, February 22, for the new \$2,500,000 naval hospital in Philadelphia, which is to cover 22 acres and will accommodate 800 patients.—Dr. Nathan F. Mossell, founder of the Frederick Douglass Memorial Hospital and medical director, for more than twenty years, has been given two years' leave of absence. Dr. John Q. McDougald is in charge of the medical department of the hospital.

Care of Children with Heart Disease.—The Philadelphia County Medical Society in cooperation with the Philadelphia Heart Association has adopted a plan for examination of children with heart disease, which follows the general policy of strengthening the position of the family physician and discouraging general resort to hospital clinics for treatment. The procedure recommended includes the following points:

1. When a school child is found to have heart disease and expert opinion as to the cause, exact diagnosis or tolerance to physical exertion appears advisable, the school nurse will visit the home and advise the parents to consult the family physician.
2. If the parents state that the child will be taken to a physician, the nurse does nothing more except to urge action if there is delay.
3. If the parent refuses or neglects for as long as one month to send the child to a physician, the school medical inspector may, if he desires consultative opinion regarding the condition of the child's heart, including the amount of physical exertion that may be undertaken, secure that advice from a cardiac clinic. If the report of the clinic indicates that the child needs medical care, the nurse will again inform the parent of the latest report of the child's condition and urge the parent to seek the services of a physician.
4. Indigent children suffering from heart disease or any other disease may properly be referred to an appropriate hospital clinic for both diagnosis and treatment.

The special committee also recommended that the medical examiners at the junior employment offices of the board of education should have diagnostic assistance when it is requested, including the service of cardiac clinics. It was further recommended that physicians visit cardiac clinics and establish working relations with them and that the cardiac clinics provide definite fee schedules, moderate in amount, based on the capacity to pay and modified at the request of the family physician.

SOUTH CAROLINA

Personal.—Dr. Robert Wilson Ball, recently health officer of Horry County, has been appointed to that position in Richland County to succeed Dr. John B. Setzler, Columbia. —Dr. Joseph I. Waring, Charleston, was recently elected president of the South Carolina Pediatric Association.

State Medical Election.—Dr. William Egleston, Hartsville, was named president-elect of the South Carolina Medical Association at the annual meeting in Spartanburg, April 18. Dr. Robert E. Abell, Chester, was installed as president and Dr. Edgar A. Hines, Seneca, reelected secretary. Drs. Joseph T. Taylor, Adams Run, and Frank M. Lander, Williamston, were reelected to the board of medical examiners and Dr. John C. Caldwell, Chester, was elected as an additional member. It was decided to hold the 1934 session in Charleston.

Society News.—Drs. Robert Wilson, Kenneth M. Lynch and Hillyer Rudisill, Jr., Charleston, addressed the Orangeburg County Medical Society recently on rheumatic fever. —The annual meeting of the hospital associations of North and South Carolina and Virginia was held in Charleston, April 5-7. William T. Sanger, LL.D., Richmond, was elected president of the Virginia association; Dr. Hodge A. Newell, Henderson, of the North Carolina association and Mr. F. Oliver Bates, superintendent of Roper Hospital, Charleston, was reelected president of the South Carolina association. —Drs. Addison G. Brenizer and Watson S. Rankin, Charlotte, N. C., addressed the Spartanburg County Medical Society, Spartanburg, recently, on the report of the Committee on the Costs of Medical Care.

SOUTH DAKOTA

State Medical Meeting at Huron.—The fifty-second annual session of the South Dakota State Medical Association will be held in Huron, May 15-17, under the presidency of Dr. John R. Westaby, Madison. Dr. Melvin S. Henderson, Rochester, Minn., will conduct an orthopedic clinic, Tuesday morning, May 16, and Dr. Joseph C. Bloodgood, Baltimore, cancer clinics, Tuesday and Wednesday mornings. Speakers included on the program are:

Dr. Byrl R. Kirklin, Rochester, Minn., Less Commonly Recognized Lesions of the Gastro-Intestinal Tract.

T. W. Munce, D.V.M., Sioux City, Iowa, Tuberculosis of Animals and Man.

H. J. Boyts, live stock commissioner, Sioux City, Economic Importance of Eradication of Tuberculosis.

Dr. Charles K. Maytumi, Rochester, Allergy.

Dr. Charles C. Higgins, Cleveland, Experimental Production of Urinary Calculi.

Dr. Henderson, Treatment of Tuberculosis of the Joints.

Dr. August E. Bostrom, state epidemiologist, and W. W. Towne, De Smet, sanitary engineer, Report of Typhoid Epidemic at Chamberlain.

Dr. Bloodgood and Dr. Augustus G. Pohlman, dean, University of South Dakota School of Medicine, Vermillion, will be the speakers at the annual banquet at the Marvin Hughitt Hotel, Tuesday evening, May 16. The South Dakota Academy of Ophthalmology and Otolaryngology will hold its annual meeting, May 16, in connection with the meeting of the state society.

TEXAS

Bill Passed.—H. 153 has passed the house and the senate, amending the law regulating maternity hospitals, by authorizing injunctions to restrain the operation of any maternity hospital which (1) is operating without a license, (2) is guilty of selling or trafficking in babies, (3) harbors persons of unsound mind or suffering from infectious or contagious diseases, except women suffering from venereal disease, or (4) is maintained for any purpose other than the sheltering of infant children or the reception, care and treatment of pregnant women.

Society News.—Physicians included on the program of the Texas Hospital Association at its annual meeting in Dallas, March 17-18, were Drs. Frank H. Shaw, Marlin; Bert W. Caldwell, Chicago, and Lucius R. Wilson, Galveston. Topics discussed included group hospitalization, public relations, nursing problems and hospital laws. Michael M. Davis, Ph.D., Chicago, spoke on "The Future of Hospitals in the Practice of Medicine." —Dr. Sanford R. Gifford, Chicago, recently conducted a clinic and lectured on glaucoma as the guest of the Dallas Eye, Ear, Nose and Throat Academy. —Drs. John G. McLaurin and Charles L. Martin, among others, addressed the Dallas County Medical Society, March 23, on "Significance of Lingual Tonsil Infection" and "Use of Newer Developments in Radiation Therapy of Cancer of the Breast," respectively. —The semiannual meeting of the Texas Surgical Society was held in Temple, April 17-18. —Drs. William B. Carrell and Herbert E. Hipps, Dallas, addressed the Wichita County Medical Society, February 15, on "Fractures of the Lower Third of the Leg" and Dr. William Rosenblatt, Wichita

Falls, "Cerebrospinal Meningitis." —Dr. Robert B. Giles, Dallas, conducted a heart clinic and Dr. Curtice Rosser, Dallas, led a round table discussion on common rectal conditions at a meeting of the Brown County Medical Society, Brownwood, February 14.

WASHINGTON

New Quarantine Station.—The U. S. Public Health Service is about to build a new quarantine station for Puget Sound at Port Townsend, on a site donated to the government by the town, at a cost of \$250,000. The station will include an executive building, employees' quarters and other structures.

Society News.—Drs. Jesse Ettelson and Francis B. Zener, Portland, Ore., addressed the Cowlitz County Medical Society, Longview, in March on "Practical Treatment of Common Skin Diseases" and "Treatment of Postpartum Complications," respectively. —Dr. James Tate Mason, Seattle, among others, addressed the Lewis County Medical Society, March 13, on "Gallbladder Ailments." —Prof. James R. Slater of the College of Puget Sound, Tacoma, addressed the Pierce County Medical Society, Tacoma, March 14, on "Modern Conceptions of the Biological Basis of Heredity." —Dr. Albert B. Murphy, among others, addressed the Snohomish County Medical Society, Everett, March 8, on "Diagnosis and Prognosis by the Newer Cytologic Examinations." —Dr. William V. Mullin, Cleveland, addressed the King County Medical Society, Seattle, April 17, on "Differential Diagnosis of Hoarseness." Drs. Frank J. Clancy and Cline F. Davidson spoke, May 1, on "Neuropsychiatry Applied to Urology" and "Sex and Internal Secretions," respectively. —Drs. Frederic G. Sprowl and George H. Anderson, Spokane, addressed the Walla Walla Valley Medical Society, Walla Walla, April 13, on "Newer Phases of Sinusitis" and "Pneumonia," respectively.

WISCONSIN

Bill Passed.—A. 459 has passed the assembly and the senate, proposing to require physicians to report to the state board of health the names of patients having cancer, carcinoma, sarcoma and other malignant growths.

Personal.—Dr. William Snow Miller, emeritus professor of anatomy, University of Wisconsin Medical School, Madison, was guest of honor at a banquet given by members of Phi Beta Psi, March 29, his seventy-fifth birthday. —The Winnebago County Medical Society held a meeting, March 30, in honor of Dr. Wilbur N. Linn, who celebrated his twenty-fifth anniversary in the practice of medicine in Oshkosh. Dr. John E. Guy, Milwaukee, addressed the society on "The Role of the General Practitioner in the Treatment of Asthma." —Dr. William H. Gunther, Sheboygan, was the guest of honor at a dinner given by his professional associates, February 20, in celebration of the fiftieth anniversary of his graduation from Rush Medical College, Chicago. He has spent his entire professional life in Sheboygan. —Dr. Philip A. Hoffmann, Campbellsport, recently celebrated his eightieth birthday. Three sons of Dr. Hoffmann became physicians. He is still in active practice.

GENERAL

Alpha Omega Alpha Lecture.—Dr. Charles F. Martin, dean, McGill University Faculty of Medicine, Montreal, will give the William V. Root Alpha Omega Alpha Lecture at the annual dinner during the session of the American Medical Association in Milwaukee, June 15.

American Heart Association to Meet in Milwaukee.—The ninth annual session of the American Heart Association, to be held in Milwaukee on June 13, will be devoted to a symposium on acute rheumatic fever and rheumatic heart disease. The meeting will be held in the Knickerbocker Hotel under the chairmanship of Dr. Walter W. Hamburger. The program includes papers on every aspect of the subject, including etiology, pathology, clinical manifestations, electrocardiographic studies and bacteriologic studies.

One Fatality on Railroads in 1932.—Railroads established a new safety record when only one passenger was killed in a train accident in 1932, the New York Times reports. This passenger was a railroad employee off duty, who was traveling in a motor passenger car when it collided with a train. The report stated that four passengers died in train accidents in 1931, the best previous year, while seven fatalities occurred in 1930. There was one fatality for every 149,807,000 passengers carried in 1931, and one for every 101,141,000 in 1930. The one passenger killed in 1932, compared with the 480,000,000 persons carried, is a new low average. A low record was also established for the number of passengers injured in train accidents, 410 in 1932 against 493 in 1931.

Societies Hold Sessions in Washington.—The American Association of Pathologists and Bacteriologists will hold its thirty-third annual meeting at George Washington University, C., May 9-10. The American and Canadian Section of the International Association of Medical Museums will hold its twenty-sixth annual session at the medical school, May 8. Speakers at this meeting will include Pedro Ara, Madrid, Spain, on "Didactic Anatomical Technology"; N. S. Sahasrabudhe, Nagpur, India, "A Simplified Gelatin Method for Mounting Museum Specimens," and Dora Deng, Shanghai, China, "Primary Calcification of Muscle Fibers in the Heart." The twentieth annual meeting of the American Association of Immunologists will be held, May 9-10, at the medical school, and the twenty-sixth annual session of the American Association for Cancer Research at the same place, May 8.

Society News.—Dr. John H. J. Upham, dean, Ohio State University College of Medicine, Columbus, gave an address at the annual meeting of the American Association of Dental Schools in Chicago, April 21-23, on "A Medical Viewpoint of Dental Education." Other physicians on the program, all of whom are associated with dental colleges, included Drs. Hugh A. McGuigan, Chicago, "Teaching of Pharmacology in Relation to Its Practical Application"; Irwin A. H. Bottenhorn, Columbus, "Teaching Pathology in the Classroom, Laboratory and Clinic"; John L. Kendall, Chicago, "What a Practical Course in Materia Medica and Pharmacology for Dental Students Should Include"; Charles R. Turner, Philadelphia, "Theory and Practice: The Importance of Their Correlation in the Dental Curriculum"; William H. O. McGehee, New York, "Foundation Stones in Building a Logical and Effective Course in Diagnosis"; Edward H. Hatton, Chicago, "Training in Pathology as a Foundation for Teaching and Research in Dentistry," and William H. G. Logan, Chicago, "Utilization of the General Hospital in the Training of Dental Students."—The National Congress of Parents and Teachers will be held in Seattle, May 21-26. The convention theme is "The Child and His Community." One session will be devoted to "Community Standards Necessary to Meet Present Conditions of Health and Safety," following an address by Dr. Estella Ford Warner of the U. S. Public Health Service, on "Community Responsibility for Public Health."—Dr. Goyt O. Larson, LaPorte, was elected president of the Northern Tri-State Medical Association at its annual meeting in LaPorte, April 11, succeeding Dr. Edward B. Pedlow, Lima, Ohio. Dr. Edward P. Gillette, Toledo, was named vice president; Dr. Herbert E. Randall, Flint, Mich., secretary, and Dr. Glenn E. Jones, Lima, treasurer. The next annual session will be held in Flint.—The American Psychoanalytic Association will hold its annual spring meeting in Boston, May 31. Dr. Ernest E. Hadley, Washington, D. C., is secretary.—The thirty-seventh annual conference of the Association of Dairy, Food and Drug Officials will be held in Milwaukee, September 5-8.—The tenth anniversary meeting of the American Society of Stomatologists was held in New York, April 27-28, at the Hotel McAlpin.

CANADA

Balfour Lectureship.—Dr. Alexander Primrose, formerly dean and professor of clinical surgery, University of Toronto Faculty of Medicine, Toronto, delivered the seventh annual Donald C. Balfour Lecture in Surgery at the university, April 5. Dr. Primrose's subject was "The Interrelation of Anatomy and Surgery." The day was the one hundred and sixth anniversary of the birth of Lister.

Bequest for Research.—The late Dr. Alexander S. Monro, Vancouver, B. C., former president of the Canadian Medical Association, who died, Aug. 12, 1932, bequeathed to the University of British Columbia a fund of \$80,000 for medical research. The bequest will become available after the death of all beneficiaries of the will. Under the terms of the will a committee representing the university, the Vancouver Medical Association and the College of Physicians and Surgeons of British Columbia is to be formed to designate the nature of the research and persons to undertake it. This is said to be the first endowment fund ever left to the University of British Columbia.

CANAL ZONE

Officers Installed.—The Medical Association of the Isthmian Canal Zone at its January meeting installed the following officers: Col. Ernest R. Gentry, chief of medical service, Gorgas Hospital, Ancon, president; Dr. Dalferes P. Curry, assistant chief health officer, the Panama Canal, vice president, and Capt. Elbert DeCoursey, Ancon, secretary.

Government Services

PHYSICIANS NEEDED FOR CIVILIAN CONSERVATION CORPS—REFORESTATION CAMPS

As has been generally announced in the newspapers, President Roosevelt and Robert Fechner, Director of Emergency Conservation Work, have approved plans for the employment of 250,000 men in national forests. Present plans call for the immediate establishment of 538 conservation work camps in twelve Western states, using 107,000 men. In the Eastern region 10,000 men will be used. Corps area commanders of the United States Army will be responsible for all matters incident to the command of the units, the construction of the camps and their supply, administration, sanitation, medical care, hospitalization and welfare. Each camp will include approximately 200 men. The United States Army has drawn up tables of organization covering the control of such camps.

MEDICAL PERSONNEL

Medical personnel for these camps will be provided at the rate of one captain and two lieutenants of the Medical Officers' Reserve Corps for each thousand men. In cases in which civilian conservation corps units are widely dispersed, contract surgeons may be obtained on a part time basis at an average of \$125 per month. In addition, two men for each company will be trained in the administration of first aid and in making physical and sanitary inspections.

HOSPITALIZATION

Hospitals will also be supplied for men in need of treatment because of illness or injury contracted in line of duty during this employment. Army, Navy and U. S. Public Health Service hospitals will be used if available in the vicinity of the camps, but if not available hospitalization will be arranged for in civilian hospitals. The U. S. Department of Labor has been assigned the task of enrolling the 250,000 men for forestry work. The men selected are sent to army stations, where they are given physical examinations.

MEDICAL SERVICES

The medical service to be provided to the men includes careful physical examination and vaccination against smallpox, typhoid-paratyphoid fever, as well as outpatient and hospital treatment. This new medical service will require that several hundred physicians now in civil life be brought into service either as reserve officers or as contract physicians.

APPLICATION FOR APPOINTMENT

The medical department of the U. S. Army, through Surgeon General Robert U. Patterson, is asking applications for these positions in order that competent medical men may be readily obtained by corps area commanders for this service. Officers of the Medical Reserve of the proper rank (captain or lieutenant) and other physicians desiring service with forestry camps or the army posts and camps engaged in reconditioning the men should make application to the commanding general of the corps area in which they reside.

CORPS AREA AND STATES INCLUDED IN EACH CORPS AREA

Following is a list of corps areas and the states included in each corps area:

First Corps Area.—Headquarters, Army Base, Boston 9, Mass. States included: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.

Second Corps Area.—Headquarters, Governors Island, New York. States included: New Jersey, Delaware and New York.

Third Corps Area.—Headquarters, U. S. Postoffice and Court House, Baltimore, Md. States included: Pennsylvania, Maryland, Virginia and the District of Columbia.

Fourth Corps Area.—Headquarters, Fort McPherson, Georgia. States included: North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi and Louisiana.

Fifth Corps Area.—Headquarters, Fort Hayes, Columbus, Ohio. States included: Ohio, West Virginia, Indiana and Kentucky.

Sixth Corps Area.—Headquarters, 1819 West Pershing Road, Chicago, Ill. States included: Illinois, Michigan, Wisconsin, Post of Jefferson Barracks, Missouri, and Arcadia Target Range, Arcadia, Mo.

Seventh Corps Area.—Headquarters, Baird Building, Omaha, Neb. States included: Missouri, Kansas, Arkansas, Iowa, Nebraska, Minnesota, North Dakota and South Dakota.

Eighth Corps Area.—Headquarters, Fort Sam Houston, San Antonio, Texas. States included: Texas, Oklahoma, Colorado, New Mexico, Wyoming and parts of Arizona.

Ninth Corps Area.—Headquarters, Presidio of San Francisco, Calif. States included: Washington, Oregon, Idaho, Montana, Utah, Nevada, California and portion of Arizona.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 8, 1933.

The Drug Traffic

The annual report of the Central Narcotics Intelligence Bureau in Cairo for 1932 reveals the inner workings of the most important illicit drug organizations in the world. It was discovered that an agent in Tientsien, China, remitted during seven months of 1931 no less than \$1,200,000 to the account of a group in Paris. Meanwhile the Berlin authorities arrested a suspected trafficker of American nationality, who they heard was coming from Constantinople. Papers found on him enabled 250 Kg. of morphine to be seized at Hamburg. They showed that he had relations with two drug manufacturers who formerly had factories in Paris and Constantinople, whence they had been expelled, and they also led to the arrest of another man, who was found to be an active link in the group in Paris. The confessions of one, who decided to retire from the business, enabled the bureau to piece together various scraps of information into a complete picture. Five years ago Paris was the drug traffickers' paradise. Only "licensed courtiers" were allowed to buy from the factories, but there were 325 of these, which shows how brisk was the business. The drugs were exported concealed in legitimate merchandise. In 1929 the French government stiffened its attitude to the drug trade, and in 1930 drug factories and brokers received notice to quit France excepting fifteen firms licensed to manufacture for the medical profession. Most of the others moved to Constantinople, but they were recently expelled by the Turkish government, and Bulgaria is now the chief center for illicit drug manufacture. The ground on which drug traffickers can operate in Europe is becoming smaller and smaller. The danger for the future seems to lie in the Far East. Japanese chemists have been competing with the European purveyors to such an extent that they have sent down the price of diacetylmorphine in China from \$600 to \$300 per kilogram. Of late the Chinese have been manufacturing an inferior kind, which sells at \$175. Unless action is taken to stop it, the Far Eastern factories will soon be supplying the illicit demands of Europe and America.

The London County Council and Hospital Consultants

The whole of the municipal hospitals of London have recently come under the administration of the London County Council. These hospitals, in addition to their regular staffs, require the services of various classes of consultants and specialists, who work on a part time basis. The council decided to reorganize the service and formulated a new scheme. The consultants, knowing what was impending, formed a committee to consult with the council on the project and drew up a memorandum, which was submitted to the council. But the council declined any such cooperation and a dispute of the first magnitude arose. The British Medical Association supported the consultants, who passed resolutions deploring the action of the council in formulating a scheme without affording the consultants an opportunity of discussing the proposals before adoption. The health officer of the council, Sir Frederick Menzies, has replied with a statement in the *British Medical Journal*. As far back as 1931 he appointed a departmental committee of his own staff to make representations to him as to the best method of obtaining consultants and specialists for the council's hospital service. This committee consisted of the principal medical officers attached to the central administrative staff and medical superintendents of the general and special hospitals. After much consideration, two reports were drafted—one dealing with

general principles, the substance of which was communicated to the medical secretary of the British Medical Association, the other a detailed scheme in the form required by the council. Later the health officer gave the medical secretary an interview, but it was impossible for him to communicate the details of a report which had not yet been submitted to the council. Still later the health officer received a deputation of the consultants and specialists, when he pointed out that he must be the person to advise the council on the suitability of applicants. A committee of consultants to advise him on the arrangements was suggested. He said that he would appreciate such advice but did not bind himself to consult a committee of any particular personnel. The report of the health officer, with certain modifications, was passed by the council. The difference between the council, on the one hand, and the consultants and the British Medical Association, on the other, is mainly one of principle—refusal to discuss with the consultants their objections to various points in the scheme.

International Postgraduate Courses for Nurses

The British Red Cross Society has undertaken to provide a scholarship of \$1,250 to assist in establishing the International Florence Nightingale Foundation. Three similar scholarships will be financed by the National Council of Nurses in Great Britain, the Nightingale Fellowship at St. Thomas's Hospital, the London Hospital Nurses' League, Guy's Hospital Nurses' League and King's College Hospital Nurses' League. The object is to establish on a permanent basis international postgraduate courses for nurses. It is hoped that a national Florence Nightingale committee will in due course be set up in every country in which the Red Cross operates to raise funds for the endowment scheme. The League of Red Cross Societies, with headquarters in Paris, has made provision for five scholarships to be awarded to Red Cross nurses on the recommendation of their national Red Cross societies, and a half scholarship has been promised by the Red Cross Society of Czechoslovakia.

PARIS

(From Our Regular Correspondent)

March 22, 1933.

Calmette's Use of BCG Vaccine for Nonallergic Adults

In his previous communications, Calmette has always emphasized that his antituberculous vaccine has only prophylactic value, which is effective only in persons free of all previous tuberculous infection. That is why he recommended at first that the BCG vaccine be used only in the new-born within the first ten days following birth, at which time the intestinal mucosa is not yet differentiated and the immunizing elements can pass directly into the lymphatic system, at a time when the child is not yet a carrier of tubercle bacilli. Others, however, have experimented with the BCG vaccine applied to older children. They have observed the rule to apply it only to persons who do not react to tuberculin. They have secured excellent results by using the subcutaneous route. Mr. Calmette has given his approval to this practice, and, in a recent communication addressed to the Academy of Medicine, he recommended a more general use of the vaccine. In France, 97 per cent of the adults react to tuberculin and are no longer susceptible to vaccination against tuberculosis, because they have already been inoculated with virulent bacilli. But, Calmette said, that situation does not exist in countries with a sparse population, such as Sweden and Norway, nor in countries in which tuberculous infection is just beginning to spread, such as French Equatorial Africa, western Canada and Greenland. Even in France, in dealing with children aged 2-5 and with children of school age, from 65 to 70 per cent of whom

are not yet allergic, tuberculous premunization appears to be practical. All observers have recognized that, after the inoculation of nonallergic children with the BCG vaccine, most of the children become allergic soon afterward. Calmette has sought recently to ascertain whether it is really necessary to administer the vaccine by means of injections, and whether absorption of the vaccine by the oral route might not produce the same effects. He experimented along this line through the Institut Pasteur in Brazzaville, French Equatorial Africa, where the majority of the native population is still nonallergic. The vaccine was given to 149 children at the school for boys and the school for girls in Brazzaville. When it was administered orally, 55 per cent of the children reacted, three months later, to tuberculin. To the children who did not react to tuberculin another dose of vaccine was given, and 10 per cent of them reacted to tuberculin at the end of three months. At the end of six months, 65.8 per cent of the persons vaccinated by the oral route had manifested an immunity. This method of protection can therefore be applied to all nonallergic children of school age in any country, and even to adults, provided they are not allergic. The vaccine was given to adults at the Ulleval Hospital school at Oslo, where two thirds of the pupil nurses were on admission allergic. The vaccinated group showed later 2.60 per cent of tuberculous morbidity, and the unvaccinated group, 26.9 per cent. It was decided henceforth to vaccinate on admission all the nonallergic pupils by means of the subcutaneous injection. The nonallergic pupils yield now only 2.80 per cent of benign tuberculous morbidity. The allergic pupils (and hence not vaccinated) furnished 25 per cent of tuberculous patients more or less gravely affected. Calmette, referring to the statistics published in the United States on tuberculous morbidity in students of medicine, recommended that, before admission, all students matriculating for the first time be subjected to a tuberculin skin test and that all nonallergic applicants be vaccinated against tuberculosis.

Medical Practice Limited to French Physicians

The Armbruster bill, which bears on the regulation of the practice of medicine in France, has finally been adopted by parliament, after having been sent back and forth several times between the chamber of deputies and the senate. The law is still incomplete as regards the organization of medical studies proper. The passage of the bill was expedited because many desired to see applied, as soon as possible, the provision designed to prevent foreign students from practicing medicine in France after securing their state diploma. These students, who have come mostly from eastern Europe, have become almost as numerous as the French students. There are already too many physicians in France, and most of them, particularly in the cities, are no longer able to earn respectable livings. Henceforth, the practice of medicine in France will be reserved to Frenchmen, with a few rare exceptions made in favor of citizens of Rumania, which accepts the French diploma. Furthermore, enrolment in the French faculties of medicine will now be confined to students who have secured a diploma from a secondary school under the same conditions as freshmen, which regulation is designed to restrict the admission of persons recently naturalized. The senate thought to take advantage of this opportunity to impose on future students of medicine the requirement of a bachelor's degree covering a knowledge of Greek and Latin. Since 1902, the universities have created a dozen different types of baccalaureate degrees, some of which cover only instruction in French, a modern language and sciences, and exclude the two classic dead languages, and these diplomas had been declared sufficient for admission to faculties of medicine. But the professors of the faculties of medicine have not ceased to protest against this letting down of the bars. Medical students who are not acquainted with Greek and Latin, they contend, will soon reveal a regrettable lack of

general culture and likewise a less complete comprehension of biologic studies, not to speak of their lack of understanding of scientific terms, which, for the most part, are derived from Greek and Latin. A strong movement developed within the medical profession itself in favor of reestablishing the requirement of a knowledge of these two languages on the part of students of medicine. This principle the senate desired to endorse in the elaboration of the new law, but the chamber of deputies, in which the socialist bloc always shows itself hostile to the formation of élite bodies of high culture, refused its assent. The senate finally yielded, on receiving assurances from the minister of public instruction that this requirement would be set up in another bill now in course of preparation. This postponement, however, is displeasing to physicians who advocate making classical studies compulsory.

Death of Professor Hutinel

Professor Hutinel has died at the age of 84. Just two weeks ago, he lost his only son, Dr. Jean Hutinel, associate professor and physician to the *hôpital de Paris*, at the age of 42. His only other son he had lost during the war. Sorrow appears to have hastened the death of this sturdy scientist. As professor of the Clinique infantile, at the Faculté de médecine de Paris, he had long been the head of French pediatricians and helped to train many pupils. There is scarcely a disease of childhood on which he had not published important researches.

BUENOS AIRES

(From Our Regular Correspondent)

March 1, 1933.

Diets in Argentine Hospitals

Reforms have been proposed in the Municipal Hospitals of Buenos Aires, following plans presented by Drs. Escudero and Navarro for the regulation of diets in hospitals. Dr. Navarro's plan is already established in the Ramos Mejía Hospital. Dr. Escudero says there is no uniformity in the types of foods and their preparation in the hospitals. The daily average diet per patient is as follows: carbohydrates, 325 Gm.; proteins, 123 Gm.; fats, 83 Gm.; calcium, 1.5 Gm.; phosphorus, 1.85 Gm., and iron, 18 mg., which amounted to 2,540 calories and which represented a cost of 0.63 to 0.67 pesos (about \$0.17). The diet contains 1 liter of milk per person. He advises the elimination of some preserved food, such as codfish and preserved vegetables. He advises the use of fresh vegetables and fruits, the use of lard and milk as sources of fats, the use of diets containing proteins, 127 Gm., that is, 1.8 Gm. per kilogram of body weight, of which 65 per cent should be of animal source and 35 per cent of a vegetable origin; he advises the elimination of liver, kidneys and viscera used in the diet. This advice is based on economic reasons, without regard to the nutritional value of those constituents of the diet. The diet of the hospitals would be divided into "general" diet with a cost of 57 Argentine cents and "especial" diet with a cost of 80 Argentine cents, with an average calculation between the two diets of 61 Argentine cents per capita daily; that is, a cost of about \$0.16. The diet will contain carbohydrates, 373 Gm.; fats, 93 Gm.; proteins, 127 Gm., totaling 2,450 calories. From the standpoint of diet, Argentina is well endowed with an abundance of food at low prices.

Diabetes and the Hypophysis

Drs. Houssay, Biasotti and Rietti recently lectured before the Academia de Medicina of Buenos Aires on the results of experiments on the rôle of the hypophysis in the development of diabetes. When normal dogs, fed with raw meat, were intraperitoneally injected with large doses (7 cc. per kilogram of body weight) of an extract of the anterior lobe of the hypophysis, hyperglycemia appeared, which did not exist on

the first day of the experiment and which gradually increased until the fifth or seventh day. When the glycemias reached or passed 1.75 per thousand cubic centimeters of blood, glycosuria, at a daily rate of from 0.5 to 2 Gm. per kilogram of body weight, was observed. The total content of ketone bodies in the urine daily increased during the periods of hyperglycemia and glycosuria up to 100 and 200 mg. per kilogram of body weight. The resistance of normal dogs and of dogs previously deprived of the hypophysis greatly increased against the toxic and hypoglycemic effects of insulin. The injection of dextrose raised the hyperglycemic curve and increased the respiratory quotient little or not at all. The injections of epinephrine and morphine produced an increased glycosuria. The proteins in the blood, the viscosity of the blood plasma and the globular glutathione were also increased. In dogs with normal thyroids, the basal metabolism was greatly increased. The diabetogenic action of the extract of the anterior lobe of the hypophysis was not observed in dogs during fasting. In this case, hyperglycemia, which appeared at the first day of the experiment, decreased in two or four days and did not increase again even though injections of the extract were continued. The extracts of muscle tissues, kidneys, thyroids and the posterior lobe of the hypophysis, as well as the injection of 0.25 mg. per kilogram of body weight of epinephrine, did not show any diabetogenic action. The hyperglycemic and glycosuric action of the extract of the anterior lobe of the hypophysis was produced even in animals previously deprived of the thyroids and the hypophysis, while in dogs previously deprived of thyroids the metabolic figures increased little or not at all. The presence of hypophyseal insufficiency greatly attenuates the symptoms of phlorhizin diabetes in dogs during fasting. On the contrary, the injection of extract of the anterior lobe of the hypophysis increases the glycosuria and the phlorhizin ketonuria of fasting dogs, previously deprived of the hypophysis, to figures identical with those shown by the control dogs at the same time that the injection prevents hypoglycemia and death of the animals. The results of the foregoing experiments confirm the results of experiments previously reported by the same authors on the importance of the hypophysis in regulating the metabolism of carbohydrates. According to Houssay, the most important function of the hypophysis is of a metabolic nature, just as important although different from that of the thyroids.

Generalized Thoracic Pulsation

Dr. Arrillaga reported in 1931-1932 that in cases of aneurysm of the descending thoracic aorta a generalized pulsation in a forward and lateral direction was present in the entire left hemithorax, while at the same time the right hemithorax was compressed and carried to the left. At the beginning of diastole the movements were reversed; that is, the left hemithorax was compressed and the right was elevated and there was a displacement to the right. Dr. Arrillaga called this phenomenon generalized thoracic pulsation and believed that it was caused by an increased impulse of the heart. Several physicians (Cossio, Padilla y del Castillo, Moia and Braun Menendez, Solari, Dabove, Del Sel and some others) have been able to find this sign. They have also verified a thoracic elevation similar to that described by Dr. Arrillaga in aneurysm of the descending aorta, in cases of hypertrophy of the heart. It is emphasized that the elevation of the thorax takes place during the systole and is not caused by an expansive impulse of the aneurysmal sac which may displace the heart.

Deaths

Among physicians who have died recently were Roberto Acosta, director of public health in 1931, Belizario Oropeza, secretary of public health in 1930, and David J. Rojo, substitute teacher of therapeutics of the Faculty of Medicine of La Plata.

BERLIN

(From Our Regular Correspondent)

March 27, 1933.

Substances in Bitumen Having an Estrogenic Action

The term "bitumen" is used to designate organic fossil substances consisting chiefly of hydrocarbons but containing nearly always oxygen, nitrogen and sulphur, in addition. These are derived mainly from animal and vegetable fat and wax residues. They include mineral oils; petroleum, asphalt and coal. Estrogenic substances are substances that, in accordance with the Allen-Doisy test, produce in the castrated mouse or rat cornified epithelial cells in the vaginal smear. This variety of cell is found in the vaginal smear of normal adult animals only during the estrual period. The estrual hormone, as derived from the follicular fluid of the ovary, the placenta, or the urine of pregnant women or gravid animals, produces not only these vaginal changes but also growth of the uterus and the vagina of castrated animals; also proliferation of the mammary gland, increase of the chrome-brown cells of Frankenhäuser's ganglion (according to Poll-Blotvogel), and regeneration of the hypophysis of castrated animals. Substances from new sources that have given a positive Allen-Doisy test and produce the effects of the follicular hormone may therefore be identified with the follicular hormone.

Professor Aschheim has discovered, as he announced recently before the Berliner Gynäkologische Gesellschaft, and likewise in the *Deutsche medizinische Wochenschrift* and in *Forschungen und Fortschritte*, that such estrogenic substances can be demonstrated in many mineral oils and in coal. Further research with Dr. Hohlweg has led to the following results: Depending on the nature of the source, the substances were tested either directly—such as petroleum—or extracts for injection were obtained through extraction with alcohol, benzene, acetone, and the like, and also by distillation. The evaluation was computed according to mouse or rat units, 1 rat unit being equal to 5 mouse units.

Among the petroleum products were found raw oils that contained 1,000 mouse units per kilogram and others with 2,000 mouse units per kilogram. By means of fractional distillation at temperatures ranging from 200 to 250 C. and with 20 mm. pressure, substances were obtained that were three times as active as the source material.

Naphthalan, a mixture of ingredients of Caucasian petroleum having a high boiling point with from 2.5 to 4 per cent of soap, was prepared and yielded a residue which on testing revealed that the naphthalan contained about 8,000 mouse units per kilogram. Two other naphthalan preparations contained from 2,000 to 3,000 mouse units per kilogram. From natural asphalt an extract was prepared that contained 200 mouse units per gram, so that a kilogram of raw asphalt yielded 10,000 mouse units.

From peat (derived from the Franzensbad Moor), such as is used for therapeutic baths, a dark oil with an aromatic odor was secured that contained 850 mouse units per gram, according to which the raw material yielded about 500 mouse units per kilogram. Lignite on extraction was found to yield 400 mouse units per kilogram. *Montanwachs*, a commercial wax product obtained by the extraction of brown coal with benzene and alcohol, yielded on testing about 8,000 mouse units, and on second testing about 5,000 mouse units, per kilogram. Hard coal (*steinkohle*), extracted with methyl alcohol and ether, yielded in one test 1,000 mouse units and, in a second test, 600 mouse units per kilogram of raw material. Tar derived from *steinkohle* yielded in one test 70 mouse units per kilogram.

The extracts thus obtained were injected into castrated rabbits and produced complete regeneration of the mucous membrane and musculature of the uterus and the vagina. Also the researches on the Frankenhäuser ganglion (the Poll and

Blotvogel chrome test) revealed in the castrated mice an increase of the chrome-brown cells. On administration of an extract to castrated rats, the castration changes occurring in the anterior lobe of the hypophysis were likewise eliminated. These experiments demonstrate the biologic identity of the newly found substances with the follicular hormone, or the estrogenic hormone of the placenta and urine. The substance has not yet been identified chemically. As regards the origin of these estrogenic substances in bitumen, there is a possibility that they originated during the course of the natural processes that produced petroleum and coal. Further research will be necessary to discover whether these observations have any practical value.

Hospital Invaded by Ants

One of the largest German hospitals, the Rudolf Virchow-Krankenhaus in Berlin, is suffering from an invasion by *Monomorium pharaonis*, or the little red ant commonly called Pharaoh's ant. The Central Health Administration has announced that the appearance of this ant does not constitute any particular menace for the institution. Pharaoh's ant was first discovered in this hospital shortly after the war, and, as suitable methods of combating it were not found, the ant propagated rapidly. Of late, means have been found to destroy the ants and they have almost disappeared from the wards. The Pharaoh ant, being a tropical insect, stays in the vicinity of the radiator coils, where they are caught, by means of suitable bait, and killed. In the hospital kitchens, the cooking processes are so arranged that it is next to impossible for the ants to get into the food. Nevertheless, the problem of the complete extermination of these ants, which appears to be a small odd species, is not yet solved. An assistant physician of the hospital developed recently a disease that he attributed to this ant, but the courts refused his claim for damages.

THE NETHERLANDS

(From Our Regular Correspondent)

March 11, 1933.

The Malaria Problem

The malaria commission created by the minister of public health, under the chairmanship of Aldershoff, has published its report for 1930 and 1931. The commission has decided that antilarval measures are not of practical value for a country such as the Netherlands, possessing an important irrigation system. The measures that it recommends are a thorough treatment of the patients, and the elimination and destruction of mosquitoes about the homes. The Zuider Zee reclamation project furnishes an exceptional opportunity for putting these measures into practice. The report makes mention of so-called control stables in the crusade against malaria. These stables, located in the malarial districts, have been used for a number of years, and the number of insects captured each month shows a marked seasonal variation.

An interesting feature of the report is an account of experiences with malaria therapy gathered in the communes of Franeker and Wormerveer. In Franeker, since 1928, malaria treatment had consisted of 1 Gm. of quinine sulphate a day for fourteen days and then 1 Gm. every four days for a period of three months. With this treatment there were many recurrences. Beginning with July, 1929, the treatment was changed to 1 Gm. of quinine a day for seven days, and the same treatment for each recurrence. This resulted in a slight increase of the recurrences, but the percentage of recoveries remained about the same. In July, 1930, a combination of plasmochin and quinine was first used. The tablets of 300 mg. of quinine sulphate and 10 mg. of plasmochin are administered for two weeks at the rate of three tablets a day. The results have been good. In forty-four cases of primary malaria there were no recurrences. The experiences with this tablet in Wormerveer were different. Here, three tablets were administered to

adults, with smaller doses to children, for a week beginning in March, 1931. Among eighty-two cases of malaria thus treated, thirty-nine cases showed a recurrence during the same year. Hence, additional observations will be needed.

Malaria in the Northern Provinces

The annual report of the commission on malaria in the northern provinces also has been published. The population is becoming increasingly convinced that the destruction of mosquitoes plays an important part in the fight against malaria. The number of cases of malaria reported in 1930 was 2,112. The rate per 10,000 inhabitants was 42.3, as against 53, 35.4 and 34.5 in 1927, 1928 and 1929. The percentage of persons affected with malaria in 1930 shows an increase. The increased percentage reported may be due to a closer contact between the physicians and the population, and to a better detection of cases. In 1930, the commission examined 51,985 localities as compared with 47,180 in 1929. The number of houses inspected was increased to 13,448, the proportion being 38.5 per cent, as against 38.3 per cent in 1929.

The Care of Preschool Children

At the second Congress on Care of Preschool Children, which was held in The Hague, Professor Scheltema said that the organization of the care of preschool children is not well developed. Opinions differ in regard to the organization of this service. Brenkman advocates placing all the care to be given preschool children under one management. A large portion of the time of the conference was devoted to the various types of care that may be given to preschool children. Leupen spoke on kindergartens and preparatory schools, and reviewed the different questions bearing on the subject. Riemens dealt with the games suitable for young children, describing the playgrounds of Paris and Vienna. Van Venn discussed the work of the consultation centers for children. In the organization of the care of young children, these centers should serve as clearing houses, by keeping in touch with other institutions. Tibout spoke on the rôle of the physician in these consultation centers. Van de Kastele, Dr. Heybrook and Dr. Van Andel stressed the importance of diet, clothing and dental care of children.

The Examination of Athletes

The federation of the centers for the medical examination of athletes has combined all the centers in the country. Through the incessant efforts of the management, new centers have been created in different places. It has been decided to continue the short radio talks. An inquiry concerning the elimination of certain candidates will be undertaken by one of the physicians of the center. Many of the athletic associations have promised to support the work of the federation.

Notification of Cases of Food Poisoning

Dr. Terburgh, inspector general of public health, has sent to the physicians of the Netherlands a letter recommending a prompt investigation in all cases of food poisoning, made under the direction of the medical inspector, who is charged with advising the mayor on the measures to be taken. The medical inspector will, if necessary, get in touch with the pharmaceutical inspector or the veterinary inspector, who will make investigations in their respective fields. The inspectors in charge of the investigation will see to it that suspected material is sent to the central laboratory of the public health service. Physicians are requested, in a case of food poisoning, immediately to inform by telephone the medical inspector of the district. When there is a recognized health service in the commune, the communication just mentioned should be sent at once to the director of that service. This regulation is in keeping with the law pertaining to infectious diseases, as recognized cases of disease may come under the head of paratyphoid, for which compulsory notification exists.

Marriages

ARTHUR D. WILSON, Carrollton, Ill., to Miss Gudrun O. Birger of Chicago, in Champaign, April 16.

JOHN DEWEY ROGERS, Jasonville, Ind., to Miss Mary Alice King at Farmersburg, April 8.

HENRY CARLISLE SHAW to Miss Dorothy Elizabeth Barker, both of Cleveland, April 15.

HERBERT SPENCER SARNOFF to Miss Beatrice Diamond, both of Chicago, March 22.

MARVIN A. BRENNECKE, Lihue, Hawaii, to Miss India Brasel of Carmi, Ill., March 15.

Deaths

Arthur Bradley Eisenbrey, Cleveland; Medical Department of Western Reserve University, Cleveland, 1906; member of the Ohio State Medical Association and the American Association of Pathologists and Bacteriologists; fellow of the American College of Surgeons; assistant in pathology, New York University and Bellevue Hospital Medical College, 1909-1910; associate in research medicine and assistant demonstrator in pathology, University of Pennsylvania, 1910-1911, instructor in surgery, 1911-1912; instructor in clinical surgery, Columbia University, 1913-1916; associate in pathology at his alma mater, 1916-1919; instructor in principles of surgery, School of Dentistry, Western Reserve University, 1919-1920, assistant professor of oral surgery, 1920-1926, and since 1926 professor of oral surgery; served during the World War; on the staff of St. Alexis Hospital; aged 52; died, March 31, of heart disease.

William Ophüls * San Francisco; University of Göttingen, Germany, 1895; dean and professor of pathology, Stanford University School of Medicine; professor of pathology and bacteriology, University of Missouri, 1897-1898, and Cooper Medical College, 1898-1912; in 1918, instructor in pathology at the U. S. army military training school; secretary, 1912-1913, and chairman, 1913-1914, of the Section on Pathology and Physiology, American Medical Association; member of the American Association of Pathologists and Bacteriologists; past president of the city board of health; since 1898, pathologist to the Lane Hospital; author of publications on pulmonary tuberculosis, coccidioid granuloma, nephritis, arteriosclerosis and other medical subjects; aged 61; died, April 27.

William Kerwin * St. Louis; Washington University School of Medicine, St. Louis, 1908; assistant professor of gynecology and obstetrics, St. Louis University School of Medicine; member of the Western Surgical Association; fellow of the American College of Surgeons; aged 47; on the staffs of the Jewish Hospital, City Hospital, Barnard Free Skin and Cancer Hospital, St. Luke's Hospital and St. Mary's Hospital, where he died, April 6, of a streptococcus infection.

John Allen Hofmann, Canton, China; Medical Department of Western Reserve University, Cleveland, 1906; associate Fellow of the American Medical Association; professor of medicine and past president of the Hackett Medical College and affiliated institutions; formerly superintendent of the David Gregg Hospital; aged 54; died, April 8, of spinal meningitis.

Charles Henry MacFarland, Jr., Cleveland; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1905; veteran of the Spanish-American and World wars; formerly superintendent of the Cleveland City Hospital; aged 55; died suddenly, March 29, of heart disease.

William Henry Porter, Brooklyn; College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College, 1877; member of the American Urological Association; emeritus professor of medicine, New York Post-Graduate Medical School; aged 79; died, March 27, of heart disease.

Alfred Clinton King * New Orleans; Medical Department of the Tulane University of Louisiana, New Orleans, 1895; professor of clinical surgery, Graduate School of Medicine, Tulane University of Louisiana; fellow of the American College of Surgeons; aged 64; died, April 1, of pneumonia.

Frederick Steele Hartmann * Chicago; Rush Medical College, Chicago, 1885; for many years on the staff of the West Side Hospital; formerly surgeon to the Cook County and St. Anthony de Padua hospitals; aged 70; died, March 17, of cerebral hemorrhage and coronary thrombosis.

* Indicates "Fellow" of the American Medical Association.

Elmer J. Burch * Duquoin, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1886; past president of the Perry County Medical Society; aged 68; on the staff of the Marshall Browning Hospital, where he died, April 2, of peritonitis following resection of the colon for adenocarcinoma.

James Murray Cook, Sardis, Ga.; Medical Department of Emory University, Atlanta, 1915; member of the Medical Association of Georgia; past president of the Burke County Medical Society; aged 46; died, January 2, in the Lenwood Hospital, Augusta, of peritonitis and cholecystitis.

Charles Raphael Mayer, New Orleans; Hahnemann Medical College and Hospital, Chicago, 1885; president of the Louisiana Homeopathic Board of Medical Examiners; aged 72; died, February 11, of adenocarcinoma of the thyroid with metastases to the cervical glands and lungs.

Charles Gaskill Stivers, Los Angeles; University of Pennsylvania School of Medicine, Philadelphia, 1891; member of the California Medical Association; formerly secretary of the Los Angeles County Medical Association; aged 63; died, March 25, of pneumonia.

Martin Donohue Delaney * Alexandria, Va.; Georgetown University School of Medicine, Washington, D. C., 1898; fellow of the American College of Surgeons; on the staff of the Alexandria Hospital; aged 58; died, February 10, of tumor of the brain.

Clarence Russell Fisher, La Fayette, Ind.; Indiana University School of Medicine, Indianapolis, 1932; intern at St. Elizabeth Hospital; aged 29; died, April 7, in the Witham Hospital, Lebanon, of injuries received in an automobile accident.

Ivison Boyd Ridgway, New York; University of Virginia Department of Medicine, Charlottesville, 1914; member of the Medical Society of the State of New York; aged 42; died, March 27, in the Union Hospital, of intestinal obstruction.

Andrew Jackson Berry * Los Angeles; University of Louisville (Ky.) School of Medicine, 1890; Barnes Medical College, St. Louis, 1897; aged 67; died, February 21, in the French Hospital, of carcinoma of the stomach and esophagus.

William Gadsden Gamble, Kingstree, S. C.; Medical College of the State of South Carolina, Charleston, 1894; member of the South Carolina Medical Association; aged 64; died, April 5, of cerebral hemorrhage and intestinal obstruction.

Gilbert Houston * West Warwick, R. I.; University of Vermont College of Medicine, Burlington, 1918; aged 38; died, February 21, in the Jane Brown Hospital, Providence, of acute appendicitis and hemolytic streptococcus peritonitis.

John L. McHenry, Hamilton, Ohio; Eclectic Medical Institute, Cincinnati, 1892; aged 62; died, January 27, in the Mercy Hospital, of shock and pneumonia, following burns received when his clothing was ignited by a gas heater.

Charles Howard Miller * San Leandro, Calif.; Cooper Medical College, San Francisco, 1896; fellow of the American College of Physicians; aged 61; died, February 2, of acute coronary artery occlusion and arteriosclerosis.

Daniel B. Stumpf, Buffalo; Homeopathic Hospital College, Cleveland, 1876; member of the Medical Society of the State of New York; aged 76; died, April 9, in the Millard Fillmore Hospital, of septic peritonitis.

Francis Drew Randall, Tampa, Fla.; University of Vermont College of Medicine, Burlington, 1880; member of the Massachusetts Medical Society; aged 74; died, March 18, of influenza, chronic cystitis and uremia.

John Alexander McNaughton, Brussels, Ont., Canada; Faculty of Medicine of Trinity College, Toronto, 1880; L.R.C.P., Edinburgh, Scotland, 1883; aged 77; died, February 9, of myocarditis and uremia.

Benjamin Arthur Hopkins, New Westminster, B. C.; Canada; University of Manitoba Faculty of Medicine, Winnipeg, 1905; member of the Pacific Coast Oto-Ophthalmological Society; died suddenly, January 22.

William Lewis Dinsmore, Decatur, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1881; member of the Medical Association of the State of Alabama; aged 81; died, March 28, of arteriosclerosis.

Andrew Cook Johnson, Garfield, Ga.; Baltimore Medical College, 1897; member of the Medical Association of Georgia; aged 60; died suddenly, February 20, at Swainsboro, of coronary thrombosis and arteriosclerosis.

William Forrest West, Jr., Everett, Wash.; University of Pennsylvania School of Medicine, Philadelphia, 1928; member of the Washington State Medical Association; aged 29; died, in March, of septicemia.

William Maclay Lyon, Kansas City, Mo.; Hering Medical College, Chicago, 1901; Kansas City Hahnemann Medical Col-

lege, 1904; served during the World War; aged 58; died, March 8, of heart disease.

Charles R. Wylie, Pottstown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1897; aged 71; died, January 21, in the Reading (Pa.) Hospital, of ureteral calculus and uremia.

Maximilian L. Loeb, New York; Yale University School of Medicine, New Haven, Conn., 1897; served during the World War; aged 58; died, April 15, of angina pectoris and coronary thrombosis.

John Theodore Kergan, La Habra, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1910; aged 47; died, February 25, in Los Angeles, of coronary sclerosis and chronic myocarditis.

William Parsons Derby, Framingham, Mass.; Harvard University Medical School, Boston, 1890; member of the Massachusetts Medical Society; aged 66; died suddenly, March 28, of heart disease.

Nathaniel M. Lewis, Murfreesboro, Tenn.; Vanderbilt University School of Medicine, Nashville, 1882; Confederate veteran; aged 85; died, March 26, at the Rutherford Hospital, of heart disease.

Ezra Peters, Johnstown, Ohio; Bennett College of Eclectic Medicine and Surgery, Chicago, 1878; Civil War veteran; aged 86; died, January 20, in the City Hospital, Newark, of arteriosclerosis.

Edgar Armistead Dulin, Bartlesville, Okla.; Georgetown University School of Medicine, Washington, D. C., 1865; formerly mayor of Nevada, Mo.; aged 89; died, April 7, of heart disease.

Laura Carter, Shelbyville, Ind.; Laura Memorial Woman's Medical College, Cincinnati, 1902; member of the Indiana State Medical Association; aged 66; died, April 4, of cerebral hemorrhage.

Godfrey Deziel, Minneapolis; St. Paul Medical College, 1886; an affiliate Fellow of the American Medical Association; aged 71; died, March 27, in St. Andrew's Hospital, of coronary thrombosis.

Charles U. Harrison, Little Rock, Ark.; Kentucky School of Medicine, Louisville, 1879; also a druggist; aged 79; died, February 5, of arteriosclerosis, chronic nephritis and coronary occlusion.

William Alonzo Vaughan ♂ Timberville, Va.; Jefferson Medical College of Philadelphia, 1884; secretary of the county board of health; aged 73; died, March 1, of acute miliary tuberculosis.

Michael George Franghiadi, Corona, N. Y.; Bellevue Hospital Medical College, New York, 1893; aged 64; died, April 8, in the Bellevue Hospital, New York, of tumor of the bladder.

Nathaniel Curtis Rogers, Chicago; University of Pennsylvania School of Medicine, Philadelphia, 1907; aged 50; was found dead, March 16, of chronic myocarditis and nephritis.

James Tracey Joiner, Herod, Ill.; St. Louis College of Physicians and Surgeons, 1909; aged 53; died, March 2, in the Lightner Hospital, Harrisburg, of cerebral hemorrhage.

Joseph Emmett Waller, Claremont, Calif.; Lincoln (Neb.) Medical College of Cotner University, 1896; aged 80; died, February 13, of coronary thrombosis and arteriosclerosis.

Clayton Jay Hinman, Los Angeles; Northwestern University Medical School, Chicago, 1904; aged 59; died, February 27, of lobar pneumonia and chronic myocarditis.

Edson Rhodes, La Crosse, Wis.; Rush Medical College, Chicago, 1883; aged 70; died, March 12, in the Lutheran Hospital, of bronchopneumonia and cellulitis of the arm.

Luther H. Morgan, West Frankfort, Ill.; American Medical College, St. Louis, 1894 and 1896; also a minister; aged 63; died, February 5, of valvular heart disease.

Frederick Merrill Ranney, Los Angeles; Bellevue Hospital Medical College, New York, 1885; aged 73; died, February 12, of chronic myocarditis and nephritis.

Franklin Goble Fay ♂ Sacramento, Calif.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1886; aged 67; died, February 14, of cerebral hemorrhage.

Cary T. Hull, Hamilton, Ohio; Cincinnati College of Medicine and Surgery, 1894; aged 65; died, April 2, in the Mercy Hospital, of skull fracture received in a fall.

Carl Amandus Mueller ♂ Redding, Calif.; Missouri Medical College, St. Louis, 1889; aged 66; died, January 30, of cerebral hemorrhage and bronchopneumonia.

Charles D. Warden, Los Angeles; Hahnemann Medical College and Hospital, Chicago, 1878; aged 80; was killed, March 15, when struck by an automobile.

John O. Hoffhine, Columbus, Ohio; Columbus Medical College, 1877; aged 79; died, April 1, in the Grant Hospital, of arteriosclerosis and pulmonary edema.

Frederick Gebhard Miller, Kearney, N. J.; New York Homeopathic Medical College and Flower Hospital, 1914; aged 49; died, March 29, of carcinoma.

James A. Campbell, St. Thomas, Ont., Canada; Western University Faculty of Medicine, London, 1912; aged 49; died, February 22, of cerebral hemorrhage.

James McTeer Miller ♂ Wytheville, Va.; College of Physicians and Surgeons, Baltimore, 1896; aged 63; died suddenly, March 12, of myocarditis.

Julius G. Kiefer, Milwaukee; University Medical College of Kansas City, Mo., 1889; also a pharmacist; aged 71; died suddenly, April 4, of heart disease.

Richard M. Singer ♂ Chicago; Chicago College of Medicine and Surgery, 1916; aged 42; died, April 8, of cerebral hemorrhage and cardiorenal disease.

George Wiley Broome, La Jolla, Calif.; Missouri Medical College, St. Louis, 1872; aged 83; died, February 25, of heart disease and pleurisy with effusion.

Lloyd George Leland, Warren, Ohio; Medical Department of Western Reserve University, Cleveland, 1883; aged 73; died, April 2, of heart disease.

William Bates Hopkins, Hamilton, Ont., Canada; Victoria University Medical Department, Coburg, 1886; aged 74; died, January 10, of endocarditis.

George Brunt Carbert, Campbellville, Ont., Canada; Trinity Medical College, Toronto, 1888; aged 65; died, February 23, of cerebral thrombosis.

Alice Mitchell De Forest ♂ Detroit; Michigan College of Medicine and Surgery, Detroit, 1900; aged 65; died, March 27, of cerebral embolism.

Frank D. Parker, San Diego, Calif.; University of Buffalo School of Medicine, 1874; aged 81; died, February 23, of arteriosclerosis and pneumonia.

Victor Wade Metzler, Coshocton, Ohio; Jefferson Medical College of Philadelphia, 1898; aged 62; died, January 18, of heart disease and influenza.

Edward Brinkerhoff, Bristolville, Ohio; Eclectic Medical Institute, Cincinnati, 1886; aged 71; died, April 1, of pneumonia and diabetes mellitus.

Bernard Newman Malo, Edmonton, Alta., Canada; University of Alberta Faculty of Medicine, Edmonton, 1929; aged 33; died, in January.

Jacob H. Yount, Newton, N. C.; University of Maryland School of Medicine, Baltimore, 1876; aged 81; died, April 1, of carcinoma of the prostate.

Sarah E. Fletcher, Columbus, Ohio; Hahnemann Medical College and Hospital, Chicago, 1896; aged 82; died, February 7, in Grove City, of senility.

Thomas H. Steers, Valley Stream, N. Y.; Bellevue Hospital Medical College, 1879; aged 76; died suddenly, in February, of heart disease.

Pearson McPherson ♂ Chicago; Rush Medical College, Chicago, 1886; aged 69; died, April 6, of myocarditis and cerebral hemorrhage.

James Arthur Fairie, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1909; aged 59; died suddenly, January 8.

Julius Dodd, New Castle, Del.; Hahnemann Medical College and Hospital of Philadelphia, 1904; aged 75; died, April 16, of coronary embolus.

Edwin R. Kreider, Monroeville, Ohio; Jefferson Medical College of Philadelphia, 1890; aged 65; died, April 5, of cerebral hemorrhage.

John B. Hiron, Springfield, Ohio; Medical College of Ohio, Cincinnati, 1885; aged 70; died, April 4, of cerebral hemorrhage.

Charles Jacob Wesley Karn, London, Ont., Canada; Trinity Medical College, Toronto, 1888; aged 70; died, February 27.

J. Monroe Klinger, Harrisonburg, Va.; University of Wurzburg, Germany, 1880; aged 83; died, March 29, of heart disease.

Valentine H. Taliaferro, Eatonton, Ga.; Atlanta Medical College, 1892; aged 64; died, February 25, of angina pectoris.

Reece N. Weaver, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1901; aged 68; died, February 7.

Thomas Oliver Redden, Indianapolis; Medical College of Indiana, Indianapolis, 1892; aged 66; died, March 21.

Bureau of Investigation

ALPHACATALYST

A Later Name for Armstrong's Oxycatalyst

For some years there has been on the market an alleged treatment for cancer that was originally known as "Armstrong's Oxycatalyst" but is now called "Alphacatalyst." Inquiries first came about the product in 1927, and in this department of THE JOURNAL for May 19, 1928, an article was published on the subject. Inquiries still continue to come in. This from a physician in the middle west:

"What can you report to me on the use of 'Alphacatalyst' in the treatment for cancer? It is an intravenous treatment and the active principle is claimed to be the alpha particles of radium and is put out by the Farnsworth Laboratories, 159 North State Street, Chicago."

A Chicago laryngologist writes:

"Will you please give me all information concerning 'Alphacatalyst'? It is contained in a vial and it was drawn to my attention as being used intravenously for carcinoma of the epiglottis. This product is made by the Farnsworth Laboratories, 159 North State Street, Chicago, Illinois."

And this from a layman:

"Can you please give me the information: Of what value is the injection of Alphacatalyst for cancer, if any?"

Alphacatalyst is put on the market by a Chicago concern using the trade name Farnsworth Laboratories. One Merle G. Farnsworth is said to be the main factor. Armstrong's Oxycatalyst was put out from Los Angeles by the imposingly named Radium Research Foundation, which at the time was said to be owned by Robert A. Armstrong, with M. G. Farnsworth as the active manager. In THE JOURNAL's article it was brought out that while the product was alleged to be in the experimental stage, commercial agencies had been established in various parts of the country, doctors were charging \$200 for a single injection, and in other ways the methods of exploitation seemed to smack more of economics than of science.

Following the publication of the article, Robert A. Armstrong wrote to the Bureau of Investigation in an attempt to defend the methods of exploitation. As to the composition of his preparation, Mr. Armstrong stated that he was "perfectly frank in saying to the physician" that:

"Armstrong's Oxycatalyst contains in part the essential elements of metamerie protein devoid of its combustible products, together with anionic halogens in solution with Alpha particles of Radium derived from fifty micrograms of Radium element together with its derivatives in a normal saline carrier."

This statement was wholly without meaning, but it was sonorous and apparently imposingly technical. No wonder Mr. Armstrong had no hesitation in being "perfectly frank" when he could do so without making himself intelligible.

In 1929 some specimens of Armstrong's Oxycatalyst were submitted to the A. M. A. Chemical Laboratory. Although the advertising of the Armstrong product has been based on the claim that the preparation is radioactive, no radioactivity was found in the specimens. These facts were published in THE JOURNAL, Jan. 18, 1930, page 206.

Friction apparently developed between Robert A. Armstrong and the Radium Research Foundation, for the Los Angeles Times on Sept. 9, 1930, carried an item reading:

"Demanding \$107,670 assertedly suffered through failure to pay for certain patent medicines furnished by him, Robert A. Armstrong yesterday sued the Radium Research Foundation, Merle G. Farnsworth, and John C. Hendee, who he says agreed to pay him \$12.50 to \$20 for each ampule of medicine supplied. The medicines are known as 'luetic antigen' and 'Halanum,' and Armstrong claims to be the originator and sole distributor of them. He says the defendants are preparing substitute remedies dangerous to patients, and asks the court to restrain their sale or distribution."

In connection with the reference to Halanum in the item just quoted, it is of interest to note that the National Food and Drugs officials declared that the Radium Research Foundation of Los Angeles shipped into Illinois in 1928 a quantity of Halanum that was adulterated and misbranded. The government charged that although Halanum was labeled as containing a definite amount of radium, it, in fact, contained no radium and was actually a weak solution of common salt in water.

Halanum was sold as the greatest aphrodisiac known and of particular value in impotency and frigidity. These and similar claims were declared false and fraudulent, and the court condemned the product and ordered that it be destroyed.

Apparently it was after Armstrong's break with the Radium Research Foundation that Farnsworth transferred the business to Chicago.

The Farnsworth Laboratories are just as vague regarding the composition of the Alphacatalyst as Armstrong was regarding the Oxycatalyst. The only difference between the two is that the Farnsworth concern uses fewer words to conceal thought. According to the booklet of the Farnsworth Laboratories:

"The Alphacatalyst is a solution containing a radium derivative, employing as its active principle the Alpha particle of radium. It has been described as a colloidal suspension."

In spite of the fact that the Alphacatalyst (Oxycatalyst) has been on the market six years, there is still no scientific evidence to indicate that it has any value. A Los Angeles physician who some years ago had tried the Oxycatalyst reported in December, 1930, that he had ceased using it because of an experience that he had had a year earlier. It appears that a patient with inoperable cancer was given a dose of the Oxycatalyst and within three minutes died with all the symptoms of shock.

Correspondence

REDUCTION OF DISLOCATED SHOULDER

To the Editor:—In THE JOURNAL, Dec. 24, 1932, page 2181, is presented "a new method" for reduction of dislocated shoulder, consisting essentially of lateral traction by means of a bandage passed over the left shoulder and under the right arm of the operator and then across the flexor aspect of the semi-flexed elbow of the patient; the operator's palms rest against the patient's anterior and posterior axillary folds, his thumbs serving to push the head of the humerus into its socket. Success is reported in one case in which roentgen observations are not mentioned. It is stated that "a search of the literature has failed to reveal any similar method." Among others, the methods described by H. A. Lawton (Dislocation of Shoulder Joint, *Lancet* 1:525, 1881) and Hans Spitzzy (Einfaches Einkenungsverfahren bei Schulterluxationen, *Zentralbl. f. Chir.* 43:934, 1916) might be considered "similar."

Recently, in a fairly complete survey of the literature on the methods of reducing shoulder dislocation since the introduction of Kocher's method (1870), I found that, in addition to a fair number of "modifications" of the latter, there had been forty-six "new" methods (none of them identical) proposed up to 1926. Twenty of these methods involve lateral traction, eight downward and seven upward. The remaining eleven methods do not involve traction, six of them consisting essentially of adduction of the arm over a fulcrum and five belonging to a class that might be described as "trick" methods. Successful reduction in one or more cases is reported for every method, so that success alone is a dubious measure of merit.

Since the past half century produced this many "new" methods of reducing a dislocated shoulder, it is hard to estimate the total number of methods previously devised by man throughout the course of his history. One early author of an extensive treatise on articulations discusses the shoulder joint first of all, saying "When dislocation toward the axilla occurs, many people know how to reduce it, for it is a frequent accident. . . . Those who are subject to frequent dislocations of the shoulder are generally able to effect reduction themselves" (Hippocrates, Magnus: *Περὶ ἀρθρῶν*, section 1 and 2, about 400 B. C.). He then describes some half dozen methods, not one of which is precisely identical with any encountered in my recent survey. Surely the intervening 2,300 years were not

allowed to slip by without many other "new methods" being devised by various individuals.

The following was written nearly half a century ago (Lucas, R. C.: Reduction of Dislocation of Shoulder by Abduction, *Brit. M. J.* 1:1062, 1886).

It is, perhaps, because it is to no one's advantage to make himself the champion of those who have passed away, that methods of treatment practiced generations ago are constantly being rediscovered and attributed to the genius of modern thought. The subject of dislocations is one especially prone to this recurrent revelation. A deformity of a joint immediately resulting from an injury is just the kind of accident likely to attract the attention of early observers, and so we find dislocations very exactly described upward of 2,000 years ago. When it is considered that the acutest surgical intellects have from this distant period been exercised in the direction of treatment, it is not difficult to understand how exceptional must be the kind of manipulation that has never yet been attempted. The commoner the injury, the greater is the chance for many to exercise their ingenuity upon it; and so we find the modes of reduction employed for dislocation of the shoulder more numerous than for any other joint. So numerous are they, that writers of textbooks, being limited as to space, are compelled to select certain methods to the exclusion of others. But the moment a method is omitted, it is almost sure to be rediscovered.

JOSEPH NASH, M.D., New York.

DISCOVERY OF TOXIC INGREDIENT IN JAMAICA GINGER

To the Editor:—I have read with interest your editorial on "Ginger Poison" (*THE JOURNAL*, March 25) and wish to call your attention to the second paragraph, in which it is stated that "credit is due to the United States Public Health Service for having discovered the real cause of a most baffling series of symptoms of 'jake paralysis.'"

The actual discovery of this ingredient—triorthocresyl phosphate, was made by the chemists of the Bureau of Industrial Alcohol and was turned over to the Public Health Service for physiologic tests to determine whether the substance that was found in the adulterated ginger was the ingredient that actually produced paralysis in more than 30,000 cases throughout the United States. It was this laboratory which first determined and isolated the triorthocresyl phosphate as such and determined it quantitatively in numerous samples, and some of this isolated substance was turned over to the Public Health Service for physiologic tests.

PETER VALAER, Chemist, Washington, D. C.

DEHYDRATION AND EPILEPSY

To the Editor:—I have noted in *THE JOURNAL*, April 1, the report on dehydration and epilepsy by Drs. Fetterman and Kumin, concerning twenty-one epileptic patients observed for a period of about one month.

I feel that it is dangerous to reduce a patient's fluids to 100 cc. a day; the purposes and objectives of the method are ignored when carried to this extreme degree. The objective is not to subtract fluid to an intolerable degree, from the customary routine of the patient, but to subtract fluid from the patient's body fluid reservoirs. Unless the patient demonstrates actual loss of body weight, there is no subtraction or no real dehydration. A pint, or 500 cc., weighs approximately one pound, and unless water is subtracted from the body tissue reservoirs there will arise no change in cerebrospinal fluid volume or pressure. If the patient receives sufficient liquids in other forms, such as the diet, enemas, ice cream and so-called watery solids, he may amply compensate for the denial of liquid per se in the prescribed amounts received. Fluid cannot be subtracted from the body tissues without a loss of body weight. Dehydration, therefore, to be evaluated, does not depend on the liquids prescribed but on the intelligent balancing of fluids, so that a progressive loss of stored tissue fluid is obtained by various means. It is humanly impossible, in my experience, to maintain curtailment of liquid to 100 cc., or $3\frac{1}{2}$ ounces, a day. The clinician fails only because the

patient either steals fluid surreptitiously or refuses to eat; this lack of cooperation was noted by Fet Kumin.

The adult patient in whom dehydration is to be should never be placed on a liquid level below 16 ounces. diet should contain not more than 40 total ounces. of fluid, if results are to be obtained. These factors varied, depending on whether the patient is "water-logged" and hydrated, or thin and emaciated. The body stores in the former require drastic dehydration, while the latter, tissue fluids are subtracted on a milder. Each case becomes a separate problem, and no fixed can be applied to all. The clinician must bear in mind that, in attempting dehydration, he is trying to achieve by therapeutic measures a subtraction of fluid volume from the craniovertebral cavity, so as to permit an equivalent reduction of circulating blood volume, which brings with advantages of better oxygenation and nutrition. In this he is attempting to create an improvement in cerebral function, which in turn may serve to control better the convulsion, and posttraumatic symptoms of dulness, headache, loss of concentration, consequent to a low-grade cerebral atrophy. The application of dehydration, when properly carried out, the convulsant states, eclampsia, intracranial pressure, and tetanizations and in some cases of hypertension, has been established, and many men throughout the country today are observing the beneficial results that follow a proper and comprehensive use of this procedure when indicated. As adjunct to other therapeutic measures directed toward correction of the cerebral manifestations of headache, vomiting, mental hebetude, convulsions, stupor and respiratory embarrassment, if intelligently and appropriately used, it has proved to be of distinct value in correcting temporary disturbances of cerebrospinal fluid pressure or volume relationships. Its use in chronic conditions is justifiable only when intelligent cooperation or supervision is obtainable, where its continued effectiveness and the objective to be gained are to be of distinct benefit to the patient, in spite of the obvious discomfort and thirst that arise from its proper application.

The clinician must supplement measures of dehydration, such as purgation, sweating, and direct drainage of spinal fluid, where body weight loss is undesirable, and above all the measures should be considered as an adjunct, although in certain conditions dehydration is fairly specific. That there is a distinct danger from overdehydration must be emphasized. An attempt to balance body fluids to a degree compatible with the individual's continuation of the program and physical health requires, above all, the careful analysis of each case before the program is instituted, and a wide variation in its adaptation. It is only one of the methods at our disposal which assist in the subtraction of a certain amount of fluid from the cerebrospinal fluid reservoirs, which in turn permits an equal amount of blood volume to take its place. Therefore, when it is necessary or desirable to improve cerebral function, its application finds the best result.

A loss of from 5 to 11 pounds in the adult is frequently required before the benefits of dehydration are obtainable. That reports of uncontrolled cases observed for a period of only a few weeks should be published as evidence against the procedure places the matter in the same category as diabetes was before the discovery of insulin. That is, crude attempts to balance the carbohydrates in the diet failed to bring forth the appropriate results; when extreme care, computation and fine measurements were employed, the results obtained were satisfactory. I waited two and one-half years before presenting my observations on the epileptic patient. Some of these cases were maintained in the hospital under strict control for periods of one year, and there is no question in my mind today that

appropriate balance of fluids, along with other therapeutic measures and a careful analysis of each case, has yielded the best possible measures of control which we have at our disposal. The 23 per cent of total failures in the chronic convulsive group, irrespective of the method used, clearly indicates that there is much further to be done, and that there are definite limits to our ability to solve properly certain of these problems. Nevertheless, improvement in mental acuity, and the subsidence or marked modification of attacks in approximately 65 per cent of cases covering a period of eight years, represents a distinct advance, and in my opinion the intelligent application and proper utilization of the principle involved in dehydration, as well as the correction of other obvious deficiencies, will offer further beneficial results in many of these difficult problems.

TEMPLE FAY, M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DIFFERENCES BETWEEN POISON OAK AND POISON IVY

To the Editor:—Can you give me a definite answer to this question: If poison ivy and poison oak are growing side by side, how would a person by branches, leaves and other characteristics distinguish one from the other? Also does poison oak grow in New York State? Please omit name.

M.D., New York.

ANSWER.—The names poison ivy and poison oak are sometimes used for the same plant; consequently there is some confusion in their use. McNair, who recently made a study of the taxonomy of these plants, has divided them as follows: *Rhus toxicodendron* L. is considered by him as the poison ivy, *Rhus quercifolia* (Michx.) Steud. is designated as Eastern poison oak, and *Rhus diversiloba* T. & G. is Western poison oak.

The geographic distribution of these plants is as follows: poison ivy: Canada, United States and Mexico between 15° and 50° north latitude except California; Eastern poison oak: New Jersey, southward and westward to Texas; Western poison oak: Washington, Oregon and California. It is evident, therefore, that neither poison oak grows in New York State.



Eastern poison oak.

Western poison oak.

Poison ivy.

The descriptions of the leaves, flowers, fruits and seeds of the three species are as follows:

Eastern Poison Oak.—The leaflets are broadly rhombic-ovate, conspicuously three to seven lobed, permanently somewhat pubescent beneath (or rarely glabrous at maturity), rather firm in texture and somewhat veiny, from 4 to 10 cm. long. The petals on the male flowers are from 2 to 3 mm. long and 1 mm. wide. The fruit is subglobose, from 4 to 5 mm. in diameter. The seeds are flattened, smooth, from 3.5 to 5 mm. long and from 2 to 3 mm. thick.

Western Poison Oak.—The leaflets are very obtuse, entire, crenulate or irregularly obtusely lobed, the incisions acute, sparingly pubescent or glabrate. The petals of the female flowers are from 2 to 3 mm. long and from 1 to 1.5 mm. wide; of the male flowers, from 3 to 4 mm. long and from 1 to 1.5 mm. wide. The fruit is subglobose and from 4 to 7 mm. in diameter. The seeds are from 4 to 6 mm. long and from 2 to 2.5 mm. thick, flattened and more or less irregularly roughened with knoblike protuberances.

Poison Ivy.—The leaflets are sparingly pubescent or glabrate, ovate to rhombic, mostly acute, entire, serrate or irregularly

and coarsely few-toothed; the length of the terminal leaflets is from 4 to 19 cm. The petals of the female flower are 2 mm. long and 1 mm. wide; of the male flower, from 3 to 4 mm. long and from 1 to 2 mm. wide. The fruit is subglobose and from 3 to 6 mm. in diameter. The seeds are roughened similarly to those of Western poison oak and are from 3 to 5 mm. long and from 2 to 2.5 mm. thick.

Poison ivy can readily be distinguished from both poison oaks by its acute leaflets, as those of both the other species are obtuse. The leaf margins and seed shapes are also different, as shown in the descriptions. The seeds of Eastern poison oak are smooth, while those of poison ivy are roughened, with irregular knoblike protuberances.

This information has been obtained from "The Taxonomy of Poison Ivy," written by James B. McNair and published by the Field Museum of Natural History, Chicago.

SENSITIVITY TO CAT HAIR

To the Editor:—I am anxious to secure information regarding the use of material that may be used for a test as well as for treatment in a patient who is extremely sensitive to the presence of a cat. As soon as he comes near one, even though he is not aware that there is one present, he begins to feel uncomfortable. He has coryza, conjunctivitis and bronchitis, and the conjunctivitis, coming on within a few minutes, is so marked that he sees only with difficulty on account of the profuse watery secretion. After leaving this area the symptoms gradually disappear, lasting about three days. 1. Would you advise a cutaneous test similar to the Schick or similar to the vaccination? 2. Would you use a paste rubbed in the skin after the scratch method of a cutaneous test? Which of the two methods is better, and why? 3. My textbook, Blumer's, states that a cutaneous test, starting at 1:100,000, should be given cutaneously so as to test the degree of immunity. Would it be possible to give a test of 1:1,000,000, then 1:100,000 and then 1:10,000 at one time on different parts of the arm or is it necessary to do one test at a time? 4. In desensitizing, What would be the proper amount to start with and what dilution would be used? 5. In case of an overdose, what are the definite symptoms to be watched for and what should be given to counteract this? 6. In desensitizing, how often should the inoculation be given? 7. How would you determine when to give the next dose? 8. What is the prognosis for recovery? 9. Would the recovery be temporary or permanent? 10. If the recovery is temporary, would it be advisable to begin further treatment and when? 11. Would it be safe after giving a series of treatments to allow the patient to come in contact with a cat or would it be safer to do a cutaneous test first? 12. Kindly advise me what material to use for the test, the treatment and where it can be secured.

A. L. OLSHANSKY, M.D., Albany, N. Y.

ANSWER.—Hypersensitivity to cat hair has been known for many years. It varies from a mild rhinitis with or without an occasional cough to a most persistent and disabling rhinitis and bronchial asthma, with or without an associated conjunctivitis. The patient mentioned is evidently quite sensitive. Why keep the cat at all? Why not get rid of the cat and allow the symptoms to subside, as they probably will if there is no further exposure to cat hair?

However, assuming that the presence of the cat is essential, and emphasizing that exposure to the cat should be as little as possible (better none at all during the period of treatment), the following obtain:

1. A cutaneous test would probably be safer than an intracutaneous one, as the patient is evidently very hypersensitive. This should be made with a fine scalpel, a needle or a razor blade.

2. A powdered extract of cat hair may be used and dissolved with tenth normal sodium hydroxide, or a liquid extract may be tried. Pastes are probably not so satisfactory.

3 and 4. After the scratch (cutaneous) test has been made and found positive, the patient should be given a series of intracutaneous tests, ranging from a 1:10,000 to a 1:100,000,000 dilution of extract of cat hair. The forearms may be used. The dilutions may be made with physiologic solution of sodium chloride or other diluent. The weakest dilution should be injected toward the elbow, the strongest toward the wrist. It is best to inject 0.02 cc. of each into the skin. A control (physiologic solution of sodium chloride) should likewise be injected at the time of testing. All the tests can safely be done at one sitting. Records should be kept and that dilution which just fails to give a positive test should be chosen as the starting point for desensitization treatment; 0.05 cc. of this dilution should be the initial injection and should be given subcutaneously in the upper part of the arm or back. The dosage should be increased approximately 50 per cent each time, and stronger dilutions should be used in succession; e. g., 1:100,000,000, 1:10,000,000, 1:1,000,000, 1:100,000, 1:10,000 and 1:1,000. It is probably not necessary or safe to go much higher than this last. Aseptic technic is essential.

5. Overdosage may cause local reaction (marked swelling at the site of injection) or general reaction (asthma, hay fever,

urticaria, one, two or all of these may result). Epinephrine, 1:1,000, in a dosage of from 0.5 to 1 cc. subcutaneously, is usually quite successful in counteracting the reaction. It may have to be repeated once or twice. In case of a reaction it is safer to lower the next dosage of cat hair extract and then increase it more cautiously.

6 and 7. The injections may be given about twice a week. If the arm is very sore, it is advisable to wait a little before the next injection.

8. The prognosis for recovery is excellent if the cat is not there, and problematic but usually fairly good if exposure is not too close.

9. The recovery might be permanent or might not. In many cases, entire relief has been obtained for many years. There have been many relapses.

10. If the cat is indispensable, treatment should be started again, as in the beginning.

11. If the patient has been carried up to a 1:1,000 dilution and has not been exposed to cat hair while under treatment, it might be safe for him to come in contact with the cat again. The presence or absence of a cutaneous test would bear little weight, although if a patient after desensitization treatment does not give positive skin test any longer he is usually well desensitized.

12. The materials to be used for the tests and treatment can be purchased from any one of several pharmaceutical houses that advertise in *THE JOURNAL*.

EFFECTS OF ALCOHOL ON WASSERMANN TEST— NEGATIVE TEST IN UNTREATED SYPHILIS

To the Editor.—1. I remember from my student days the fact that sailors often take on large quantities of alcohol before undergoing physical examinations in order to render the Wassermann reaction negative. Is this possible? If so, what quantity of alcohol would have to be ingested and in what form, and how long would any effect on the Wassermann or Kahn test last? 2. What is the effect, if any, of the ingestion of alcohol during the course of treatment of syphilis? Is there any decrease in the spirocheticidal activity of neoarsphenamine or iodobismutol if the patient drinks alcohol in any form or quantity following the injection of the drug? 3. What is the incidence of negative Wassermann and Kahn reactions in untreated syphilis? I was recently consulted by a patient who had multiple penile chancres about five years ago. There was a solitary inguinal gland which was incised and drained at that time. The lesions were negative by dark-field examination and cleared up readily with local treatment only. The patient was told at the time that he had only a Duerey bacillus infection and Wassermann and Kahn reactions throughout the past five years have all been negative. He has never had any physical signs or clinical symptoms of syphilis. He states that he has never had any clinical symptoms or any evidences of a secondary reaction. There are no palpable glands anywhere in the body. What advice should be given this patient as to his possibility of having syphilis? What about treatment? Please omit name.

M.D., Missouri.

ANSWER.—1. There is difference of opinion as to the effect of alcoholism on serologic tests for syphilis. According to Craig and Nichols, from 6 to 8 ounces (175 to 235 cc.) of whisky taken in the course of twelve hours is sufficient to render positive Wassermann reactions negative. Kolmer, however, reports that eight syphilitic patients whose blood he has been able to examine with his Wassermann method "during acute alcoholic debauches" gave positive reactions. Browning and McKenzie also report no change from positive to negative Wassermann reactions during acute alcoholism. There appears to be no published report on the effect of alcoholism on the Kahn reaction. A personal communication from the author of this method indicates that alcoholism does not influence the Kahn reaction.

2. Alcohol in moderate doses taken during the course of treatment probably has no harmful effect. Alcoholic debauches, however, might so injure the liver and other organs as to predispose to untoward effects. There appears to be no experimental evidence as to the effect of alcohol taken during treatment. If moderate amounts of alcohol were harmful, syphilologists would have long ago become aware of it, since among Europeans and other peoples the daily use of such amounts is widespread.

3. Both tests may be negative in isolated cases of syphilis; less frequently on repeated examinations. There is no agreement among different workers as to the relative incidence of negative reactions obtained with both tests in the various stages of syphilis. It is generally believed that this incidence is smaller with the Kahn than with the Wassermann test. In the case referred to, the clinical observations suggest multiple chancroids and not chancres. The persistently negative serologic reaction furnishes additional evidence against syphilitic infection.

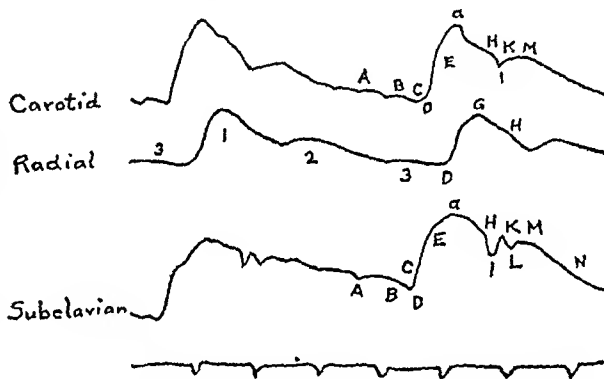
CURVES SEEN IN SPHYGMOGRAM

To the Editor:—Kindly explain, by means of a diagram if possible, the significance of the various curves seen in a sphygmogram taken from a normal radial pulse. I have been informed by medical friends, if I have understood them aright, that a sphygmographic tracing does alter even after severe anemia, acute asthenic diseases, degenerative changes in cardiac musculature causing diminution of its contractile force, or even when a person goes to a high altitude. I fail to understand how this can be. For, in all these and similar cases, the loss in the force of the ventricular systole, and the loss of tone of the muscular coat of the arteries, are factors that are bound to have some effect on the volume and strength of the radial pulse. Should this not influence the sphygmogram curves? The temporary cardiac dyspnea noticed among persons going to high altitudes varying from 7,000 to 10,000 feet is, I understand, caused by a diminished supply of oxygen to the tissues; the trouble disappears after a rest and as soon as an increase in the number of red cells has taken place. But during the period of hypoxemia, should not the sphygmogram show some change in the rhythm and force of the pulse? For practitioners situated in isolated districts, polygraphs and electrocardiographs are out of the question; but it seems to me that with the aid of a sphygmomanometer and an accurately adjustable sphygmograph it should be quite possible for a medical man to diagnose all disorders of cardiac rhythm with a certain degree of accuracy. Kindly mention the different types of sphygmographs now available on the market. Please omit name and address.

M.B., C.M., India.

ANSWER.—The accompanying illustration is a copied record of pulses obtained simultaneously from the carotid, radial and subclavian arteries by the optical method of registration.

Wave 1 is due, of course, to systolic ejection. The cause of wave 2, the dirotic wave, is still under discussion. Some consider it a centripetally reflected wave; others consider it a centrifugal wave due to a rebound from the closing semilunar valves. In some sphygmograms one finds at times a small predirotic and a small postdirotic wave. Both, according to Wiggers, are "caused by waves reflected from the periphery."



Record of pulses obtained simultaneously from the carotid, radial and subclavian arteries by the optical method of registration. (From Wiggers, *Pressure Pulses*, p. 70.)

There seems to be no literature on sphygmogram records in the disease conditions asked about. All wrist sphygmographs recording by levers have so many inherent imperfections that they have gone into scientific discard since O. Frank designed an optical instrument for registration of the pulse. However, even this modern sphygmograph may be as troublesome "in isolated districts" as the polygraph or electrocardiograph and probably would not be nearly so informative. Before investing in any of the various instruments it would be well to read the chapter on the "Arterial Pulse" in "The Pressure Pulses in the Cardiovascular System," by Carl Wiggers, New York, Longmans, Green & Co., 1928. The article is replete with bibliographic references. If then the correspondent is still of a mind to set out along his original program, Dr. Carl Wiggers of the Department of Physiology, Western Reserve University Medical School, Cleveland, Ohio, will advise him on the most serviceable type of instrument for his purposes.

IMMUNITY IN MEASLES

To the Editor:—Does measles confer a permanent immunity? Recently a child, aged 1, was discharged from a hospital for contagious diseases, after being retained the usual length of time for measles. Two days later the child developed Koplik spots and a somewhat typical measles rash. Please omit name.

M.D., New York.

ANSWER.—One attack of measles usually confers protection against further attacks; second attacks do occur, but rarely. Relapse also may occur at intervals of from ten to forty days or so after the original attack; in a given case it may be difficult to determine whether there has been a new infection from without.

SYNTHETIC COLORS FOR CANDIES

To the Editor:—What substances are used to color candies, and to what extent are they injurious? What substances are used to imitate vegetable flavors in candy making, and to what extent are they injurious? Please omit name.
M.D., New York.

ANSWER.—Candy, perhaps, as much as any commercial food product, is made under undesirable conditions, such as may attend the petty candy kitchen. This statement does not apply to hundreds of reputable confectioneries, large and small, wherein scrupulous care is exercised in the selection of both coloring and flavoring entering candies.

Most candies are colored with synthetic colors permitted by federal regulations. The general list is composed of:

Red shades: Ponceau 3R, amaranth, erythrosine, Ponceau SX.
Orange: Orange 1.
Yellow: Naphthol yellow S, tartrazine, yellow A B, yellow O B, Sunset yellow F C F.
Green: Guinea green B, light green S F yellowish, fast green F C F.
Blue: Indigotine, brilliant blue F C F.

These colors are regarded as harmless for most persons in the quantities used in any food, but it is believable that a few persons are susceptible to their action, because of sensitivity or, at least, heightened susceptibility.

Flavoring is liable to contain harmful agents. Only the fact that minute amounts are employed saves the consumer. Most flavors are made as natural derivatives and as imitations. Confectionery trade journals extensively advertise all manner of "imitation" fruit flavors. Reference to books furnishing recipes for various trades reveals astonishing formulas for candy flavors. By way of example, isopropyl alcohol, coumarin, and synthetic rose otto are the ingredients of one formula for caramel flavor extract.

This is one of hundreds of formulas apparently violating the U. S. Department of Agriculture's regulation implied in the following definition:

A flavoring extract is a solution in ethyl alcohol of proper strength of the sapid and odorous principles derived from an aromatic plant, or parts of the plant, with or without its coloring matter, and conforms in name to the plant used in its preparation.

Federal regulations make a distinction between "extract" and "flavoring." Nonalcoholic flavoring products may be labeled with the term "flavoring," provided they contain the same kind and preparation of flavoring ingredients as are required for extracts, and provided suitable labeling indicates that the vehicle is not alcohol. Further federal regulation permits of the use of imitation flavoring extracts and flavors, provided the word "imitation" is plainly stated on the package. "Worthless imitations" are, however, not tolerated, the requirement being that such imitations substantially take the place of the product they imitate.

Extensive information on extracts and flavors, colors, and so on may be found in the following publications:

Labeling Flavoring Extracts, U. S. Department of Agriculture, Food and Drug Administration (revised to March 1, 1932).
Definitions and Standards for Food Products, U. S. Department of Agriculture, June, 1932.
Regulations for the Enforcement of the Federal Food and Drugs Act, ed. 10, U. S. Department of Agriculture, November, 1930.
Certification of Coal Tar Food Colors, U. S. Department of Agriculture, October, 1927.

From a practical point of view, neither colors nor flavors are common causes of serious harm to candy eaters.

Oil of wintergreen, either natural or synthetic, used in flavoring candy, has on a few occasions of overeating of candy led to a diagnosis of "poisoning from candy flavoring."

GEORGIA WARM SPRINGS FOUNDATION

To the Editor:—I have had a patient who spent three months at Georgia Warm Springs following infantile paralysis and who seems to have made little progress since his return home. Would you consider it worth while to have this patient return? In other words, do these springs offer anything beyond ordinary massage and muscular reeducation?

M.D., Chicago.

ANSWER.—Warm Spring Foundation is an institution at Warm Springs, Georgia, about eighty miles south and a little west of Atlanta. The institution was founded by President Franklin D. Roosevelt, who has been a frequent visitor and patient.

The institution is under the medical direction of Dr. Michael Hoke, formerly of Atlanta, and formerly president of the American Orthopedic Association.

The physical therapy is under the direction of Miss Alice Lou Plastridge, who was trained under Goldthwait, Lovett and Legg of Boston and the leading orthopedic surgeons in Chicago.

The pools at Warm Springs are fed by spring water with a temperature between 88 and 92 degrees all the year round,

with an average of 89 F. There are three pools—two that belong to the Warm Springs Foundation and one that is public property.

Some of the advantages of a sojourn to Warm Springs include the muscle reeducation, under-water gymnasium, swimming, massage, heliotherapy, training in walking and a desirable climate. The stimulation of the patient's morale is one of the highly important attributes of the institution. There is no institution that ranks higher than Warm Springs Foundation in its ability to make a person an independent physical unit. There are constantly from sixty to a hundred patients, including physicians, who are undergoing physical reconstruction and reeducation in this institution.

"BICHROME CHECK" IN REFRACTION

To the Editor:—Do you have any scientific information on file that justifies the claims made for the "Bichrome Check" described in the enclosed folder and sold by the Southeastern Optical Company of Atlanta, Ga.? If you have such information, I will appreciate your sending it to me. Please omit name.

M.D., Louisiana.

ANSWER.—The "Bichrome Check" has not yet received scientific corroboration, nor has it been accepted by the ophthalmologic profession. The one statement in the advertising circular that "accommodation cannot intervene and cause trouble with measurements" is sufficient ground to view the whole scheme askance, for of all things that have not been learned yet, the suspension of accommodation without cycloplegia is the one about which there is least known.

GOLDSTEIN'S HEREDOFAMILIAL BLEEDING (NONPURPURIC AND NONHEMOPHILIC)

To the Editor:—Heredofamilial angiomatosis with recurring hemorrhages, the condition which I described as heredofamilial bleeding, or heredofamilial epistaxis (Rendu-Osler-Weber disease), with or without multiple hemorrhagic telangiectasia (nonpurpuric and nonhemophilic), was not considered in the answer given for the reported case of "unusual bleeding" in THE JOURNAL, March 18, page 839. In the case of the woman, aged 53, who has had epistaxis all her life and yet shows a normal blood picture (4,580,000 red blood cells and 91 per cent hemoglobin) and normal clotting time, a history of her mother's having had some nosebleed leads one to suggest a more careful examination of the patient and her eight brothers and sisters. A careful history and examination may disclose multiple small telangiectases and the occurrence of nosebleed, rectal bleeding, hematuria, or gastric bleeding.

The possibility of the presence of this condition is not excluded by the fact that apparently only one or two members of this family (in the present generation) are definitely known to have epistaxis. Several other members of this family may have some scattered telangiectases in the nose, on the lips, in the mouth or on the finger tips which are being overlooked.

It is of interest to note that Schwartz, of Fairport Harbor, Ohio, recently reported the use of female sex hormone in epistaxis (*Clin. Med. & Surg.* 40: 111 [Feb.] 1933) in the case of a youth, aged 18, seen by the author during May and June, 1932. The patient had suffered from frequent epistaxis for a few years: "the nose showed pin-point areas of erythema" (I believe these were small telangiectases, and it would be interesting to know if, on careful examination, other members of this patient's family are found to have small telangiectatic lesions of the nose, mouth, lips or similar locations) "on the right septal wall." He gave the patient seven doses of female sex hormone by injection and a preparation of the same substance by mouth, three times daily, together with the injections, and continued the oral administration of the pills until July 1. Schwartz says: "there have been no attacks of epistaxis from that time to December 12, 1932."

To be considered, of course, are David's hemorrhagic disease in women (endocrine deficiency), Frank's essential thrombopenia, Glanzmann's thrombasthenia, chronic hemorrhagic purpura (Lusitanus, Riverius, Werlhof), Willebrand and Jurgens' "constitutional thrombopathy"—more common in women than in men, with normal blood platelets, much prolonged bleeding time, prolonged menstruation, and frequent and persistent nosebleed, bleeding from slight wounds difficult to check and without joint complications (as occurs in hemophilia), hemorrhagic capillary toxicosis (Frank) and possibly also the familial hemophilia and accidental or sporadic cases of epistaxis excluded.

Following are articles on the subject:

- Goldstein, H. I.: Heredofamilial Bleeding, *M. Rev. of Rev.* 38: 679 (Dec.) 1932.
Goldstein, H. I.: Hereditary Hemorrhagic Telangiectasia with Recurring (Familial) Hereditary Epistaxis, *Arch. Int. Med.* 27: 102 (Jan. 15) 1921.
Goldstein, H. I.: Goldstein's Heredofamilial Angiomatosis with Recurring Familial Hemorrhages (Rendu-Osler-Weber's Disease), *Arch. Int. Med.* 48: 836 (Nov., pt. 1) 1931, abstr. *Arch. Dermat. & Syph.* 25: 707 (April) 1932.
Goldstein, H. I.: Hereditary Multiple Telangiectasia, *Arch. Dermat. & Syph.* 26: 282 (Aug.) 1932.
Goldstein, H. I.: *Tr. Am. Therap. Soc.* 32: 47, 1932.
Goldstein, H. I.: Hereditary Epistaxis, *Internat. Clin.* 3: 148 (Sept.) 1930; 4: 253 (Dec.) 1930.
Willebrand and Jurgens: *Klin. Wchenschr.* 12: 414 (March 18) 1933.
David, W.: *Med. Klin.* 22: 1755 (Nov. 12) 1926.

The case described in THE JOURNAL, March 18, page 839, perhaps more nearly fits into the group of "heredofamilial bleeding, with or without angiomatosis."

HYMAN I. GOLDSTEIN, M.D., Camden, N. J.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Milwaukee, June 12. *Applications should be filed before May 15.* Sec., Dr. William H. Wilder, 122 South Michigan Blvd., Room 1417, Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The general oral, clinical and pathological examination will be held in Milwaukee, June 13. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Milwaukee, June 12. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

CALIFORNIA: *Reciprocity.* San Francisco, June 14. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: *Basic Science.* Prerequisite to license examination. New Haven, June 10. Address State Board of Healing Arts, 1895 Yale Station, New Haven.

DELAWARE: Wilmington, June 13-15. Sec., Dr. Harold L. Springer, 1013 Washington St., Wilmington.

FLORIDA: Jacksonville, June 12-13. Sec., Dr. William M. Rowlett, Box 786, Tampa.

GEORGIA: Atlanta, June 14-16. Joint Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

INDIANA: Indianapolis, June 20-22. Sec., Dr. William R. Davidson, 413 State House, Indianapolis.

IOWA: Iowa City, June 6-8. Dir., Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KANSAS: Kansas City, June 20-21. Sec., Dr. C. H. Ewing, Larned.

KENTUCKY: Louisville, June 7. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

MARYLAND: *Regular.* Baltimore, June 20-23. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. *Homoeopathic.* Baltimore, June 20-21. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MISSOURI: St. Louis, June 7-9. Address, State Board of Health, Capitol Bldg., Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* The examinations will be held at centers where there are five or more candidates, June 26-28 and Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: Omaha, June 7-9. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEW JERSEY: Trenton, June 20-21. Sec., Dr. James J. McGuire, 1101 Trenton Trust Bldg., Trenton.

NORTH CAROLINA: Raleigh, June 19. Sec., Dr. B. J. Lawrence, 503 Professional Bldg., Raleigh.

OHIO: Columbus, June 6-9. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

TEXAS: Galveston, June 20-22. Sec., Dr. T. J. Crowe, 918-19-20 Mercantile Bldg., Dallas.

VERMONT: Burlington, June 21-23. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 21-23. Sec., Dr. J. W. Preston, 803 Medical Arts Bldg., Roanoke.

WISCONSIN: *Basic Science.* Milwaukee, June 17. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. *Regular.* Milwaukee, June 27-29. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.

WYOMING: Cheyenne, June 5. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

INTERNSHIPS IN ARMY HOSPITALS

The Surgeon General has recently notified appointees to internships in army hospitals that, as a part of the federal economy program, these positions have been abolished and appointments canceled. Also, many interns are deferring their entry into practice because of the present economic situation, and are prolonging their period of institutional service. Inevitably, fewer places remain to be filled by this year's graduates. Hence there are at the present time an unusual number of well qualified men available. The Council on Medical Education and Hospitals, desiring to be of service both to the hospitals and to the medical students, requests that all hospitals approved for intern training that still have vacancies for interns so notify the Council at once, stating how many vacancies there are and the dates on which they must be filled. Address the Council on Medical Education and Hospitals, 535 North Dearborn Street, Chicago, Illinois.

Massachusetts Endorsement Report

Dr. Stephen Rushmore, secretary, Massachusetts Board of Registration in Medicine, reports 14 physicians licensed by endorsement from Jan. 3 to Jan. 31, 1933. The following colleges were represented:

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Yale University School of Medicine.....	(1930),	(1931)	N. B. M. Ex.
Tulane University of Louisiana School of Medicine.....	(1930)	N. B. M. Ex.	
Boston University School of Medicine.....	(1929)	N. B. M. Ex.	
Harvard University Medical School (1929),	(1930, 2),	(1931)	N. B. M. Ex.
Tufts College Medical School.....	(1931, 3)	N. B. M. Ex.	
University of Pennsylvania School of Medicine.....	(1930)	N. B. M. Ex.	
University of Vermont College of Medicine.....	(1930),	(1931)	N. B. M. Ex.

California Reciprocity Report

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports 11 physicians licensed by reciprocity with other states and 2 physicians licensed by endorsement from Jan. 3 to Jan. 12, 1933. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists.....	(1931)		Oregon
Baltimore Medical College.....	(1911)		Maryland
University of Maryland School of Medicine and College of Physicians and Surgeons.....	(1922)		Utah
Detroit College of Medicine and Surgery.....	(1917)		Michigan
Washington University School of Medicine.....	(1930)		Missouri
John A. Creighton Medical College.....	(1909)		Montana
Ohio Medical University.....	(1900)		Ohio
University of Oklahoma School of Medicine.....	(1900)		Missouri
Hahnemann Medical College of Philadelphia.....	(1910)		Penn.
Jefferson Medical College of Philadelphia.....	(1927)		Ohio
Queen's University Faculty of Medicine.....	(1907)		N. Dakota
College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
University of Illinois College of Medicine.....	(1928)		U. S. Navy
University of Minnesota Medical School.....	(1928)		U. S. Navy

Book Notices

The Differential Diagnosis of Endocrine Disorders. By Allan Winter Rowe, Director of Research, Evans Memorial, Massachusetts Memorial Hospitals, Boston. Cloth. Price, \$4. Pp. 220. Baltimore: Williams & Wilkins Company, 1932.

The science of endocrinology constitutes one of the newer chapters in medical history, and one that is still in the writing. The procedure of differential diagnosis offers a basis for an initial resolution of the underlying etiology in a group of derangements of the endocrine glands. As an endocrine diagnosis is reached only after the elimination by test and observation of the many nonglandular conditions that may simulate an endocrinopathy, the procedure is adapted for general diagnostic purposes. The material from which this monograph is drawn is the result of investigations since 1912, in the course of which more than 5,000 individuals have been carefully studied by a large group of clinicians and laboratory workers. The work is offered by the author in condensed monographic form in the hope that it may be of some service in the evaluation of obscure or incipient conditions.

The whole investigation was divided into three phases. In the beginning, groups of apparently normal individuals were subjected to a long series of tests and observations under carefully controlled conditions, and the individual level of performance was exactly recorded. The second phase called for the application of the same series of measurements to individuals in whom there existed clear-cut involvement of single glands. The third and last phase was the study of the level of function of the individual case.

Emphasis is made on the fact that no single finding of endocrine disease should be adduced to support such a diagnosis until all possible nonendocrine causes of the phenomenon have been ruled out by observation and test.

Results are drawn largely from cases exhibiting disorders of the pituitary, the thyroid, the gonads and the suprarenals. A few cases of diabetes have been included for purposes of comparison. The parathyroids have been omitted because little is known concerning the disease picture produced by disturbance of their function. A few structures, such as the pineal body, the thymus and the spleen, are to be regarded as on the borderline, their place in the endocrine family being by no means firmly established. In the series the author has seen but two or three in which there has been apparently a coexistent primary disturbance in more than one endocrine gland.

The author presents the outline of analysis of each case. The first step in the study of each patient calls for a compilation of a comprehensive and detailed medical history, complemented by a thorough and careful physical examination. The second phase is the performance of the somewhat elaborate series of routine, standardized laboratory tests and measurements which experience has shown to be potentially significant. The third phase of the study deals with the application of such additional special examinations as are suggested by the history, the physical examination and the results of the routine

laboratory procedures. The third phase also includes the many special examinations, such as an eye and urologic examination. All the results are correlated and the whole mass of material is subjected to critical analysis. To conserve the patient's time and yet to permit thorough study, a definite schedule has been drawn up which outlines the sequence of certain basic routine procedures and allows opportunity for the inclusion of a wide variety of special examinations.

The monograph is divided into three sections. The first deals with clinical considerations and occupies the main portion of the book. It is concerned with evaluation and comparative figures concerning sex and age, primary and secondary complaints, the medical history and the physical examination. The second section covers the laboratory measurements, such as the urine, chemical examination and morphology of the blood, basal metabolism and galactose tolerance, and gives differential diagnostic illustrations. In the third section, special examinations and roentgenologic data are discussed. Throughout the book there are numerous valuable tables comparing the various endocrine and nonendocrine groups.

The volume must not be considered a finished clinical textbook on the differential diagnosis of endocrine disorders. It is a monograph consisting for the most part of a compilation of data concerning a group of endocrine disturbances obtained under carefully controlled conditions. Much of this is of great importance in the evaluation of the individual case but does not contribute to a clinical diagnosis of the specific endocrine disorder. Such a statement is not a reflection on the author or his work but rather on the field in which he is writing. The positive yield of clinical facts from such a critical presentation is necessarily small and concerns itself more with trends rather than with sharp definitions.

The author has established for the medical profession data that may be useful in the differential diagnosis of endocrine disorders. It will find its greatest usefulness for those clinicians who are critical in their study of endocrine cases. A large list of bibliographic references is given. These are purely expository in character and designed solely to give details that exceed the limits of the presentation.

Handbuch der Röntgendiagnostik und -therapie im Kindesalter. Unter Mitwirkung von Fachgenossen. Herausgegeben von Prof. Dr. St. Engel, Leiter der Kinderklinik der Stadt. Krankenanstalten, Dortmund, und Dr. L. Schall, Leiter der Kinderabteilung des Landeskrankenhauses, Homburg-Saar. Paper. Price, 72 marks. Pp. 720, with 637 illustrations. Leipzig: Georg Thieme, 1932.

This is a compendium of roentgen diagnosis and therapy in infants and children, edited by Stephan Engel of Dortmund and Ludwig Schall of Homburg. The various chapters and special subjects are written by collaborators whom the editors have chosen as authorities for their special subjects. The subject matter falls into several divisions. A general introduction to the physical knowledge of x-rays and special technic for their employment with infants and children precedes the chapters on diagnosis. The portion of the contents on therapy is also preceded by chapters on physical theory and technic. The sections on roentgen diagnosis are introduced by a chapter on normal roentgenologic skeletal anatomy. Then follow chapters on diseases of the skeletal system, including excellent discussions of the bone changes in rickets, scurvy, congenital syphilis and bone tuberculosis. Fractures are not included in this work, as the editors have confined themselves to the roentgen diagnosis of internal diseases. The section on roentgen diagnosis of the thorax is introduced by chapters on the development of the chest and its organs in infants and children. An important and instructive chapter by Engel on the anatomy of the thoracic lymphatics in relation to roentgen diagnosis is unusually well illustrated, as is the chapter on the influence of thoracic deformities on the chest organs. The chapters on acute and chronic nonspecific diseases of the lungs are well illustrated, both in the text and by the accompanying roentgenograms. Diseases of the pleura, including empyema and interlobar and mediastinal pleurisy, are well discussed and illustrated. The chapters on pulmonary tuberculosis, from primary focus to cavity formation, contain well illustrated examples, as do the chapters on the mediastinum and heart. An instructive table on congenital cardiac defects offers a comparison of the shape of the heart with the various lesions in this group. The section on the digestive tract includes discussions on esophageal stenosis, pylorospasm and stenosis,

ptosis in asthenic children, visualization of the appendix, megacolon, and related subjects. Chapters on the urogenital system and nervous system are included, and a special chapter is devoted to the technic of encephalography. The chapters on therapy include such subjects as the use of roentgen treatment in tuberculosis, blood and lymphatic diseases, eczema, asthma, epilepsy and tumors. Of interest also are the discussions of the effect on the fetus of roentgen treatment of pregnant women, and the use of roentgen treatment for hypertrophy of tonsillar and adenoid tissues: The discussion on the diagnosis and treatment of thymus hyperplasia is critical and well presented. The mistakes in diagnosis and the dangers of therapy are pointed out. The completeness and excellence of the text throughout are enhanced by the clear illustrations. The editors and authors should be congratulated on the excellence of this volume, which should prove an aid to every one interested in roentgen diagnosis and therapy of infants and children.

A Textbook of Surgery. By John Homans, M.D., Assistant Professor of Surgery, Harvard Medical School. Compiled from Lectures and Other Writings of the Members of the Surgical Department of the Harvard Medical School. Second edition. Cloth. Price, \$8. Pp. 1231, with 517 illustrations. Springfield, Illinois: Charles C. Thomas, 1932.

This is a record and amplification of lectures in surgery given by the members of the surgical department of Harvard Medical School. These lectures, together with other material supplied by the various instructors, have been augmented and edited by the author in a book intended to teach the fundamentals of the practice of surgery. In this edition the original material has been condensed by the deletion of redundant passages, and new material has been added. The most important additions deal with basophil adenomas of the pituitary, coccioidial granuloma, generalized osteitis fibrosa cystica associated with parathyroid adenomas and hyperparathyroidism, and tumors of the islands of Langerhans with hyperinsulinism. Other subjects newly introduced include acrocyanosis, aspiration of the pericardium, congenital strictures of the duodenum, diathermy, embolectomy, fascial spaces of the foot and their relation to septic processes, fat embolism, nonunion of fractures, Paget's disease of the nipple, changing conceptions of shock, and torula infection. A chapter on anesthesia has been added at the end of the volume. The pagination of the original fifty-six chapters remains the same as in the first edition in spite of the additional new material. The book is written in a narrative style, making it easy reading. One of the most valuable features, especially from the standpoint of a student, is a brief historical summary, at the beginning of each chapter, of the material to be discussed. A biographic index of fifty-two pages gives the names quoted in the text, the pages on which the names appear, the subject of the writing to which reference has been made, and the source of the reference. The volume contains a surprising amount of valuable information and is a credit to Harvard Medical School.

Lehrbuch der allgemeinen Pathologie und der pathologischen Anatomie. Von Professor H. Ribbert. Second edition revised by Dr. Carl Sternberg, Professor für pathologische Anatomie an der Universität in Wien. Paper. Price, 38 marks. Pp. 650, with 759 illustrations. Berlin: F. C. W. Vogel, 1932.

This revision of Ribbert's famous textbook of general pathology and pathologic anatomy has been undertaken to preserve for students of pathology an honored and extremely popular work. New sections have been added, old ones rewritten, and 120 new illustrations, many of them photomicrographs, included. The book is essentially a textbook for students and for that reason is brief in its consideration of individual pathologic processes. Frequent references to different German handbooks of pathology help to overcome this defect. The section on general pathology includes 239 pages; the remainder deals with special pathologic anatomy. Morphology is kept in the foreground throughout, although functional aspects are frequently correlated with structural changes. The illustrations are excellent and are well selected to amplify the written portions. It is natural that in the desire to preserve the character of the original book some of the defects of age would be in evidence. For instance, it is questionable whether a superficial consideration of parasites and bacteria belongs properly in a modern textbook of pathology in this day of adequate textbooks in these fields. Furthermore, Ehrlich's figures from the side-chain theory and discarded views of immunology might well

be deleted from a textbook on pathologic anatomy, to allow space for the inclusion of more material of a pathologic-anatomic nature. The book could be improved further by more attention to the many contributions to the field of pathology from other than German sources. In general, however, Professor Sternberg has performed a difficult task in attempting, as he stated in the previous edition, to "pour new wine into old bottles," and he deserves the thanks of all students of pathology for his efforts to keep the much esteemed Ribbert textbook as available and as useful for the future as it has been in the past.

The Carnegie Foundation for the Advancement of Teaching. Twenty-Seventh Annual Report of the President and of the Treasurer. Paper. Pp. 174. New York, 1932.

Part I of this report contains the proceedings of the trustees and of the executive committee.

In part II, entitled "Education and the Economic Situation," Dr. Henry Suzzallo, president of the foundation, says that existing conditions impose certain practical policies of curtailment on college management but that a human policy is none the less insistently demanded. Economy, he holds, is consistent with improved methods both of teaching and of learning. Educational policies having this result have already been demonstrated in many institutions. They represent the best of the changing trends in American higher education, such as (1) the transfer of emphasis from the teacher to the learner, thus making independent study more important than class instruction; (2) the broadening of the curriculum so as to emphasize that thoughtful correlation of knowledge which develops interest, flexibility of mind and resourcefulness above highly specialized practical knowledges and skills, and (3) the placing of institutional emphasis on a smaller number of educational services rendered with high quality, rather than on many services rendered under minimum standards.

Dr. Suzzallo also suggests the more effective distribution of services among higher educational institutions; the reduction of the number of major lines of study by making the first two college years basal for all students; requiring a large number of comprehensive courses; substituting fields of concentration for departmental specialization, and providing fewer elective courses and offering them less often; and the reorganization of teaching to emphasize the learner through reducing the number of class sessions, using more technics and increasing the size of classes wherever the subject or the teaching technic permits.

President Suzzallo continues: "It is doubtful institutional ethics to allow at present a policy of economy, however necessary, to lead to discharges from the academic staff. It is far better to divide the work and the salary budget. Those long in service should have the most secure tenure. In most cases the older members have the poorest chance to be reemployed. The younger staff members, those on term appointments, have the lowest salaries and probably the smallest accumulated surplus. If released, they probably could not find other teaching positions—at least not for a considerable period of time. For the present there is only one sound moral policy for administrators and trustees to pursue, and that is to divide the available work that can be paid for. Thus no professor's family now attached to the institution need be without a guarantee of at least a minimum living."

Dr. Henry S. Pritchett, president-emeritus of the foundation, declares: "In the process of formal education in a school, a certain amount of information will be acquired depending, in the main, on the energy and natural capacity of the pupil and the wisdom of the teacher. But as a matter of fact, the acquiring of information has almost nothing to do with education. Education consists in training the habits and developing the powers of the mind, not in acquiring knowledge. . . . And what are the principles that underlie the formation of sound habits of the mind? Mainly, two: First, that self help is the only way to an education. A child can be guided, but he educates himself. Second, the habit of doing what is done, thoroughly, accurately, to the best of the child's ability. In the inculcation of these two habits of the mind lies the fundamental difference between the educational process in America and in England, Germany, and France."

Part III of the report contains four contributions grouped under the heading "Educational Inquiry." Analyzing the

problem of student selection for the professions, Alfred Z. Reed finds that: "The struggle for existence, under competitive conditions, will separate the successes from the failures, and renders a verdict more final and decisive than any tests or examinations could provide. Whatever other devices are utilized, success or failure must ultimately be determined by the hard facts of experience. This . . . helps to explain why there is a constant pressure, on the part of sanguine youth, to rely upon this method alone—to demand a chance to 'make good' on its own responsibility, no matter how unfavorable are the judgments, and how despondent the prognostications, of its elders." There are, however, "two reasons why this extreme claim must be disallowed. One is its cruelty to the individual practitioner, who finds himself committed to a career for which he is not fitted. The other is its unfairness to those members of the public—employers, clients, patients—whose interests would often be inadequately served. Considerations alike of individual kindness and of social efficiency justify a system of educational and professional tests to determine who shall, and who shall not, be permitted to proceed further in his chosen career."

Tribute is paid to distinguished educators and scholars who died within the year, notably David Starr Jordan, president-emeritus of Stanford University. This section, together with the treasurer's report, constitutes part IV.

Copies of this report and any of the fifty-two other publications of the foundation may be had without charge on application, by mail or in person, to the office of the foundation at 522 Fifth Avenue, New York City.

Medizinische Praxis: Sammlung für ärztliche Fortbildung. Herausgegeben von Prof. Dr. L. R. Grote, Chefarzt der C. von Noorden Klinik, Frankfurt a. M., Prof. Dr. A. Fromme, Direktor der chirurgischen Abteilung des Stadtkrankenhauses Dresden-Friedrichstadt, and Prof. Dr. K. Warnekros, Direktor der Staatlichen Frauenklinik zu Dresden. Band XVI: Syphilis des Herzens und der Gefässe. Von Prof. Dr. Ed. Stadler, leitender Arzt der inneren Abteilung des Stadtkrankenhauses Plauen i. V. Paper. Price, 6.50 marks. Pp. 82, with 8 illustrations. Dresden: Theodor Steinkopff, 1932.

Stadler treats syphilis of the heart and blood vessels in a short monograph organized along conventional lines with emphasis on clinical considerations. The changes in the small vessels during the primary and secondary stages of syphilis are presented briefly, and scant consideration (one page) is given the cardiovascular aspects of congenital syphilis. Slightly more than half of the text is devoted to syphilitic aortitis. Like others of its kind, this monograph suffers from lack of appreciation of the growth in knowledge of the pathology of syphilis that has occurred in the past twenty years. Thus the pathology of syphilis of the myocardium is that of Virchow, recognizing only gummatous and fibrotic forms. The histologic changes in syphilitic myocarditis the author considers to be of no practical interest (page 7). Much more complete treatment is accorded syphilitic aortitis, with good descriptions of the medial lesions, but here the author labors under the mistaken belief that spirochetes can be demonstrated but rarely in the aortic wall. Stadler considers it highly probable that excessive use of tobacco and of alcohol damages the vessel walls and predisposes them to invasion by the spirochete. Clinical diagnosis, treatment and prophylaxis in late syphilis in respect to cardiovascular involvement are presented in a rather too condensed form. Arrangement and typography are well adapted to reference work, and each section is concluded with an excellent summary of its main features. This work lacks that completeness and thoroughness of presentation which would entitle it to a position of authority.

Outline of the Cranial Nerves. By John Favill, A.B., M.D., F.A.C.P., Associate Clinical Professor of Neurology, Rush Medical College of the University of Chicago. Cloth. Price, \$1.50. Pp. 112, with 14 illustrations. Chicago: University of Chicago Press, 1933.

This little book fills a definite need in the student's armamentarium. The data concerning the cranial nerves, which are exceedingly difficult to find in a convenient form in textbooks, are here presented in logical and systematic order. The information is accurate, and the latest material concerning the fifth and ninth nerves derived from results of operations has been incorporated. The author's interesting and valuable studies concerning the vestibular nerve and the relation of the eye muscles to the currents in the semicircular canals here become available. The student will find the book helpful, and it will be a convenience to the neurologist in teaching.

An Introduction to Dermatology. By Norman Walker, Kt, M.D., L.L.D., Consulting Physician for Diseases of the Skin, the Royal Infirmary, Edinburgh. Assisted by G. H. Perelval, M.D., Ph.D., F.R.C.P., Assistant Physician for Diseases of the Skin, the Royal Infirmary, Edinburgh. Ninth edition. Cloth. Price, \$7. Pp. 382, with illustrations. Baltimore: William Wood & Company, 1932.

Although the distinguished author still modestly considers this work an introduction to dermatology, in it he carries the reader far beyond the portals of the specialty. He makes of the book a personal exposition of the knowledge gained by his extensive experience of many years. This is especially true in his discussion of treatment. Here he is not satisfied with a mere listing of the methods of therapy, but for each he gives minute instructions for the preparation of the medicaments used and for their application. He discusses the indications and contraindications for various drugs, and among the latter he stresses the danger of using mercurial ointments on the skin of patients having an elevation of temperature, for in them there may be sufficient inhalation of the volatilized mercury to produce severe poisoning. In the main the author is very conservative in his statements, but in discussing seborrhea he states with confidence that the disease is caused by the spore of Malassez and also that psoriasis is the extremely dry form of seborrhea. Neither of these beliefs has met general approval. In this edition the discussion of the treatment of syphilis has been deleted because the treatment has become a matter for experts. It is to be hoped that this omission will call attention to the often forgotten fact that the treatment of syphilis involves more than the mere ability to inject drugs into the body. The book is well written and profusely illustrated and it deserves a place on every medical shelf.

A Short Practice of Surgery. By Hamilton Bailey, F.R.C.S., Surgeon, Royal Northern Hospital, and R. J. McNeill Love, M.S., F.R.C.S., Surgeon, Royal Northern and Metropolitan Hospitals, London. Volume I. Cloth. Price, 20s. Pp. 530, with 269 illustrations. London: H. K. Lewis & Company, Ltd., 1932.

A Short Practice of Surgery. By Hamilton Bailey, F.R.C.S., Surgeon, Royal Northern Hospital, and R. J. McNeill Love, M.S., F.R.C.S., Surgeon, Royal Northern and Metropolitan Hospitals, London. Volume II. Cloth. Price, 20s. Pp. 531-1005, with 349 illustrations. London: H. K. Lewis & Company, Ltd., 1932.

These two volumes are carefully compiled and may serve as an excellent source of concise surgical information for the student and the practitioner. The statement in the preface of the first volume, "In presenting this survey of general surgery we have endeavored to include only such material as is recent or which has been generally accepted," is adhered to throughout the entire book. There are numerous illustrations, which clarify the text. Each part of the body is discussed with the special pathologic processes most frequently encountered.

Office Surgery. By Fenwick Beekman, M.D., Visiting Surgeon, Bellevue Hospital, Everyday Practice Series. Edited by Harlow Brooks, M.D. Fabrikoid. Price, \$5. Pp. 402, with 94 illustrations. Philadelphia & London: J. B. Lippincott Company, 1932.

Beekman has laid out a difficult task for himself in this little volume. Starting with the premise that "there is no lesser surgery" and "that surgical operations, though minor in character, should be performed in the hospital," he goes on to explain what may be done in the office. Tenorrhaphy and the surgical treatment of Dupuytren's contracture and of ganglion are taken up with the proviso that they should be done in the hospital. Although the book contains a great deal of information, it would have been still more useful if there had been a fuller discussion of finger fractures and the indications for the administration of tetanus antitoxin; moreover, the employment of local anesthesia in carbuncles in diabetic patients is of questionable advisability. However, Dr. Beekman's wide experience and learning make most of the volume valuable and interesting.

Les maladies des veines et leur traitement. Par G. Delafer. Avec la collaboration de MM. R. Hügel, J. Saldman, J. Durand-Boislaud, M. Chailly et L. Sauvé, chirurgiens des hôpitaux de Paris. Paper. Price, 45 francs. Pp. 371, with 20 illustrations. Paris: Masson & Cie, 1932.

This is an interesting though somewhat philosophical dissertation on the diseases of the venous system. It is studded with ingenious hypotheses, some of which may stand the test of experimental or clinical evidence. Of the many suggestions may be mentioned the emphasis on normal venous peristalsis and its absence or diminution in certain types of individuals,

and the explanation of pigmentation and dry peeling skin in phlebitis as being due to short reflexes from vein to skin. The injection treatment may interrupt these venous reflexes and thus improve the disorders of the skin. Varicose eczema is explained by sensitization accentuated by the stasis of antibody-antigen. The formation of edema is presented in the light of physiochemical factors influencing the retention of fluid in the tissues. A great deal of emphasis is laid on endocrine factors, a favorite subject of French authors. The spastic and organic arterial changes that accompany venous thrombosis are given full recognition. Latent pelvic thrombi are responsible for many of the deep thromboses following pelvic operations. Oral vaccines of *B. coli* and enterococcus are advised as a preventive measure. The distinction between creeping and metastatic phlebitis deserves consideration. The author injects in cases of intermittent claudication, injects two years after a deep phlebitis and one year after a superficial phlebitis, but obviously does not test for resting infection. This monograph hardly fills the need of the general practitioner who seeks simple and concise data on the subject. Those specially interested in this field may find a stimulating mass of observations, deductions and speculations, with which they can heartily agree or disagree.

Medicolegal

Privileged Communications Statute Construed

(*Mississippi Power & Light Co. v. Jordan (Miss.), 143 So. 483*)

The appellee, Jordan, injured his leg some years prior to the institution of this suit. In the course of his employment with the appellant company, he claimed to have bruised and injured his leg at the site of the old injury. He sued the company alleging that as a result he had become totally disabled and that his leg would have to be amputated. The company contended that Jordan had an osteomyelitis in his leg and that this condition had continued from the time of the prior injury to the present time. From a judgment against it, the company appealed to the Supreme Court of Mississippi, division b.

The company first assigned error in the refusal of the trial court to admit the testimony of a physician, practicing medicine in partnership with Jordan's attending physician, who did not personally attend him but who had visited him while he was confined in the hospital and had observed his condition. In contemplation of law, said the Supreme Court, this physician was as much the physician of the patient as was the attending physician. He was no more competent to testify than the attending physician would have been. Where two physicians practice medicine as a partnership, patients are patients of the firm and are entitled to have the privilege accorded by the statute forbidding the disclosure in court of confidential communications applied to both partners.

The company complained also of the trial court's refusal to admit the testimony of a physician who had treated Jordan's first injury and who had later employed him for some years. This physician stated that he could not separate his knowledge of the case obtained while attending Jordan, from what he learned, not as a physician, but through his contact with him as his employer. The trial court, said the Supreme Court, correctly ruled that this physician was incompetent to testify. It certainly would be narrowing the purpose of the statute with respect to privileged communications to permit a physician to testify as an expert who had attended a patient and who had gained an intimate knowledge of his condition under the confidence of a physician and patient. In such case, he would, naturally, give testimony as an expert based, to a considerable extent, on facts gained as the patient's physician. It would be an unsafe experiment to hazard or jeopardize confidential relations by this practice.

At the trial, the company offered to prove by two trained nurses, who attended the patient and who had dressed the injured leg when the attending physician treated him, that the ailment was chronic in character. The trial court permitted them to testify as to the condition of the leg as they saw it when it was dressed but refused to permit them to testify as

experts. The nurses, said the Supreme Court, were not qualified from their training to testify that the disease was chronic in character. Such testimony can be given only by a medical expert. For a witness to qualify as an expert, he must not only have a knowledge of different diseases and symptoms, but he must have had sufficient practical experience to enable him to discriminate between symptoms and conditions of different diseases. Ordinarily, a nurse is not a privileged witness as to what she sees and learns in her contact with patients, or as to communications made to her by patients. But where the information and knowledge of a nurse are gained by being present and assisting a physician and hearing communications between the physician and the patient, then her testimony is incompetent, for it is a part of the knowledge of the physician himself. As to all matters learned when not assisting a physician, a nurse is a competent witness. The rule, the court thought, is well stated in Wigmore on Evidence (ed. 2) vol. 5, par. 2381, reading, in part, as follows:

As with the other privileges, however, the privilege forbids compulsory disclosure by that person only to whom the confidence was extended. It, therefore, does not exempt a third person overhearing the communication, from testifying to it, *except so far as the third person is an agent of the physician.*

The judgment in favor of Jordan was accordingly affirmed.

Latent Syphilis Activated by Burn

(Harder v. Thrift Const. Co. (Mo.), 53 S. W. (2d) 34)

In the course of his employment, Harder was burned in the arm with molten lead. Ten days later his mental condition appeared abnormal and the disturbance was first diagnosed as melancholy. The burn had healed sufficiently well in five weeks for him to be discharged as cured. His mental condition, however, gradually grew worse and some three months later it was diagnosed as general paralysis of the insane, attributed to syphilis. Death ensued and his widow was awarded compensation by the industrial commission, which held that the industrial accident activated a preexisting syphilitic condition, which in turn was the cause of the death. The employer and his insurance company eventually appealed to the St. Louis (Mo.) court of appeals.

The appellants complained of the action of the industrial commission in permitting a chiropractor to testify that a burn can affect the superficial nerves, resulting in an irritation of the nervous tract; and that it was very much of a possibility that the burn had produced his insanity. The testimony of the chiropractor, said the court of appeals, was competent. It went only to matters falling within the purview of the subjects of which the chiropractic practice act requires a chiropractor to be informed. Moreover, the appellants were in no position to object at this time to that testimony. It came in wholly without objection and part of it was elicited by the appellants' own counsel on cross-examining the chiropractor.

The appellants next denied liability for compensation where an industrial accident has aggravated or precipitated a pre-existing condition without which the ultimate effect of the injury would have been slight or trivial. Bearing in mind, said the court, the humanitarian purpose of the workmen's compensation act and the liberal construction to be given its provisions, compensation under such circumstances should be granted. In the enactment of the Missouri compensation act the legislature saw fit to prescribe no standard of physical fitness to which an employee must conform. His right to compensation does not have its basis in any implied warranty of perfect health or freedom from latent and dormant tendencies to disease which may develop into positive and known conditions if incited and stimulated to activity by any accidental cause arising out of and in the course of his employment. The act is designed to afford protection to the weak as well as to the strong employees. In the practical application of the act, the disability or death for which compensation is to be given may just as legitimately be attributed to the accidental injury where undeveloped and latent physical conditions are set in motion and accelerated so to produce such final result, as where the same result follows directly from visible violence done to the physical structure of the body. The award of compensation to the widow was therefore affirmed.

Society Proceedings

COMING MEETINGS

- American Medical Association, Milwaukee, June 12-16. Dr. Ofin West, 535 North Dearborn Street, Chicago, Secretary.
- American Academy of Pediatrics, Chicago, June 12-13. Dr. Clifford G. Grulee, 636 Church Street, Evanston, Ill., Secretary.
- American Association for the Study of Goiter, Memphis, Tenn., May 15-17. Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Ind., Secretary.
- American Association for the Study of the Feeble-Minded, Boston, May 31-June 3. Dr. Groves B. Smith, Beverly Farms, Godfrey, Ill., Secretary.
- American Association for Thoracic Surgery, Washington, D. C., May 9-11. Dr. Duff S. Allen, 3720 Washington Boulevard, St. Louis, Secretary.
- American Association of Genito-Urinary Surgeons, Washington, D. C., May 8-10. Dr. Henry L. Sanford, 1621 Euclid Avenue, Cleveland, Secretary.
- American Association of Medical Milk Commissions, Milwaukee, June 12-13. Dr. Harris Moak, 360 Park Place, Brooklyn, Secretary.
- American Bronchoscopic Society, Washington, D. C., May 10. Dr. Edwin McGinnis, 104 South Michigan Boulevard, Chicago, Secretary.
- American Climatological and Clinical Association, Washington, D. C., May 9-10. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Massachusetts, Secretary.
- American Dermatological Association, Chicago, June 8-10. Dr. W. H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.
- American Gastro-Enterological Association, Washington, D. C., May 8-9. Dr. John Bryant, 311 Beacon Street, Boston, Acting Secretary.
- American Gynecological Society, Washington, D. C., May 8-10. Dr. Otto H. Schwarz, 630 South Kingshighway, St. Louis, Secretary.
- American Heart Association, Milwaukee, June 13. Dr. Irl C. Riggan, 450 Seventh Avenue, New York, Executive Secretary.
- American Laryngological Association, Washington, D. C., May 9-10. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otolological Society, Chicago, June 8-10. Dr. Robert L. Loughran, 33 East 63d Street, New York, Secretary.
- American Neurological Association, Washington, D. C., May 9-11. Dr. Henry A. Riley, 117 East 72d Street, New York, Secretary.
- American Ophthalmological Society, Washington, D. C., May 8-10. Dr. J. Milton Griscorn, 2213 Walnut Street, Philadelphia, Secretary.
- American Orthopedic Association, Washington, D. C., May 8-10. Dr. DeForest P. Willard, 1916 Spruce Street, Philadelphia, Secretary.
- American Otolological Society, Washington, D. C., May 8-9. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.
- American Pediatric Society, Washington, D. C., May 8-10. Dr. Hugh McCulloch, 325 North Euclid Avenue, St. Louis, Secretary.
- American Proctologic Society, Chicago, June 12-13. Dr. Frank G. Runyon, 1361 Perkiomen Avenue, Reading, Pa., Secretary.
- American Psychiatric Association, Boston, May 29-June 2. Dr. Clarence O. Cheney, 722 West 168th Street, New York, Secretary.
- American Society for Clinical Investigation, Washington, D. C., May 8. Dr. H. L. Blumgart, Beth Israel Hospital, Boston, Secretary.
- American Society of Clinical Pathologists, Milwaukee, June 9-12. Dr. A. S. Giordano, 531 North Main Street, South Bend, Ind., Secretary.
- American Surgical Association, Washington, D. C., May 8-10. Dr. Vernon C. David, 59 East Madison Street, Chicago, Secretary.
- American Therapeutic Society, Milwaukee, June 9-10. Dr. Oscar B. Hunter, 1801 Eye Street, N.W., Washington, D. C., Secretary.
- American Urological Association, Chicago, June 20-22. Dr. Gilbert J. Thomas, 1009 Nicollet Avenue, Minneapolis, Secretary.
- Association for Research in Ophthalmology, Milwaukee, June 13. Dr. Conrad Berens, 35 East 70th Street, New York, Secretary.
- Association for the Study of Allergy, Milwaukee, June 12-13. Dr. Warren T. Vaughan, 808 Professional Building, Richmond, Va., Secretary.
- Association for the Study of Internal Secretions, Milwaukee, June 12-13. Dr. F. M. Pottenger, 1930 Wilshire Boulevard, Los Angeles, Secretary.
- Association of American Physicians, Washington, D. C., May 9-10. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.
- Conference of State and Provincial Health Authorities, Washington, D. C., June 5-6. Dr. A. J. Chesley, State Department of Health, St. Paul, Secretary.
- Congress of Physicians and Surgeons of North America, Washington, D. C., May 9-10. Dr. John T. King, Jr., 1210 Eutaw Place, Baltimore, Secretary.
- Connecticut Medical Society, Hartford, May 24-25. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Georgia Medical Association of Macon, May 9-12. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.
- Illinois State Medical Society, Peoria, May 16-18. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.
- Iowa State Medical Society, Des Moines, May 10-12. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.
- Maine Medical Association, Poland Springs, June 26-28. Dr. Philip W. Davis, 22 Arsenal Street, Portland, Secretary.
- Massachusetts Medical Society, Boston, June 5-7. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.
- Medical Library Association, Chicago, June 19-21. Miss Marjorie J. Darrach, 645 Mullett Street, Detroit, Secretary.
- Medical Women's National Association, Milwaukee, June 11-12. Dr. Inez A. Bentley, 45 Gramercy Park, New York, Secretary.
- Minnesota State Medical Association, Rochester, May 22-24. Dr. E. A. Meyering, 11 West Summit Avenue, St. Paul, Secretary.
- Mississippi State Medical Association, Jackson, May 9-11. Dr. T. M. Dye, Clarksdale, Secretary.
- National Tuberculosis Association, Toronto, Canada, June 26-30. Dr. Charles J. Hatfield, Seventh and Lombard Streets, Philadelphia, Secretary.
- Nebraska State Medical Association, Omaha, May 23-25. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.
- New Hampshire Medical Society, Manchester, May 16-17. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, June 6-9. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.
Oklahoma State Medical Association, Oklahoma City, May 15-17. Dr. C. A. Thompson, Commercial National Bank Building, Muskogee, Secretary.
Pacific Coast Oto-Ophthalmological Society, San Francisco, June 28-30. Dr. F. C. Cordes, Fitzhugh Building, San Francisco, Secretary.
Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 167 Angell Street, Providence, Secretary.
South Dakota State Medical Association, Huron, May 15-17. Dr. John F. D. Cook, Langford, Secretary.
Texas, State Medical Association of, Fort Worth, May 8-11. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.
West Virginia State Medical Association, Charleston, May 22-24. Mr. Joe W. Savage, Professional Building, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to *THE JOURNAL* in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

185: 1-148 (Jan.) 1933

- *Control and Complete Remission of Polycythemia Vera Following Prolonged Administration of Phenylhydrazine Hydrochloride. H. Z. Giffin and E. V. Allen, Rochester, Minn.—p. 1.
- Discussion of Role of Arterial Thrombosis in Visceral Diseases of Middle Life, Based on Analogies Drawn from Coronary Thrombosis. L. A. Conner, New York.—p. 13.
- Familial Eosinophilia. S. G. Stewart, Philadelphia.—p. 21.
- Vascular Crises. D. Riesman, Philadelphia.—p. 29.
- Accumulation of Iron in Tuberculous Areas: III. Effect of Ferric Chloride Injections on Course of Development of Tuberculosis in Rabbits. V. Menkin, Boston.—p. 40.
- Time and Dosage as Factors in Cure of Syphilis. H. S. Newcomer, Philadelphia.—p. 49.
- *Macroscopic Examination of Blood: Discussion of Its Value and Description of Use of Single Instrument for Determination of Sedimentation Rate, Volume of Packed Red Cells, Leukocytes and Platelets and of Icterus Index. M. M. Wintrobe, Baltimore.—p. 58.
- *Bilateral Cortical Necrosis of Kidneys: Angioneurotic Anuria. J. E. Ash, Washington, D. C.—p. 71.
- Significance of Large Q Wave in Lead III. S. Strauss and L. Feldman, Chicago.—p. 87.
- *Gaucher's Disease: Report of Two Cases, Remission in One Following Administration of Liver Extract. E. B. Potter and C. C. McRae, Ann Arbor, Mich.—p. 92.
- Undulant Fever: Sources, Modes of Infection and Prophylaxis. C. M. Carpenter and Ruth A. Boak, Rochester, N. Y.—p. 97.
- New Type of Duodenal Tube Tip. J. R. Twiss, New York.—p. 109.

Polycythemia Vera Following Administration of Phenylhydrazine Hydrochloride.—Giffin and Allen's experience with thirty-seven patients with polycythemia vera, who were observed from four to six years, shows conclusively that after the initial course of phenylhydrazine has been satisfactorily completed the disease frequently can be controlled by the administration of a small dose (from 0.1 to 0.4 Gm.) of the drug each week. This control in some instances has been accomplished by a dosage which has been shown to be ineffective experimentally so far as hemolysis is concerned (for example, 0.06 Gm. a month). This fact leads one to suspect that phenylhydrazine may have another effect on the blood picture, such as an inhibitory effect on the production of erythrocytes, although it is fairly well proved to have a stimulating effect on the production of leukocytes. This suspicion cannot at present be proved but is worthy of further consideration. Some of the patients after from two to four years of treatment have been able to dispense with the drug entirely and maintain a normal number of erythrocytes. Other patients have found it necessary to use the drug regularly; in some instances, subsequent courses of a daily dosage have been necessary. The occurrence of complete remission in some of the cases is apparently of especial significance. The untoward effects of phenylhydrazine are also considered; this phase of the subject was amplified in a report in *THE JOURNAL*, May 4, 1929, by Giffin and Conner. Phenylhydrazine should not be

given if the diagnosis of polycythemia vera, with increased blood volume, cannot be well established.

Macroscopic Examination of Blood.—Wintrobe states that by the following consecutive steps it is possible to gain accurate and valuable information concerning the blood with the use of a modified hematocrit: 1. Five cubic centimeters of blood is drawn from a vein with a dry syringe and needle and placed in a small bottle containing 10 mg. of potassium oxalate, with which the blood is thoroughly mixed. 2. The hematocrit is filled to the 10 mark by means of a capillary pipet and the sedimentation rate is determined. The sedimentation rate serves as a guide to the presence and intensity of organic destructive or infectious disease. 3. The filled hematocrit is next centrifugated until no further packing of the corpuscles takes place. The volume of packed red corpuscles and the volume of packed leukocytes and platelets may then be read. The author does not recommend this method of employing the hematocrit as a substitute for more detailed microscopic or chemical studies but, in experienced hands, it can be made to indicate along what lines the further study of the blood should proceed. This may well be the first blood study in diagnostic clinics in which the technical personnel is too limited to permit the routine performance of erythrocyte, leukocyte and platelet counts as well as hemoglobin and van den Bergh tests. His experience has convinced him that the hematocrit affords more information concerning the blood than either the hemocytometer or the hemoglobinometer and that the information is more accurate. It is now his practice to use it in all diagnostic blood studies.

Bilateral Cortical Necrosis of Kidneys.—Sixty-two cases of bilateral cortical necrosis of the kidneys selected from the literature and two personally observed cases are analyzed by Ash. The condition occurs most commonly in pregnancy but is also seen in a variety of infectious diseases; it may follow trauma and it may develop cryptogenically. Bilateral cortical necrosis is a pathologic term applicable only to the terminal stage of certain cases of nonobstructive anuria. The author recommends that "angioneurotic anuria" be adopted as a clinical term to include all nonobstructive anurias. Treatment is of no avail in the pathologic condition of bilateral cortical necrosis, but there is evidence that decapsulation of the kidneys or nephrotomy will favorably influence an otherwise refractory angioneurotic anuria. The immediate cause or causes of bilateral cortical necrosis are not known, but it is most probable that the anuria is the result of vasomotor disturbance, probably a vasoconstriction that is followed by vasoparalysis and stasis, and that the striking picture of necrosis and thrombosis found post mortem is relatively terminal. Depending on conditions that are not understood, these terminal lesions may develop after a few hours of anuria, may be deferred for days or may not develop at all. In the last circumstance the patient may recover.

Gaucher's Disease.—Potter and McRae add two proved cases of Gaucher's disease to the reported cases, which now total over 100. One of their patients improved immediately following splenectomy, but no recent checkup has been possible. The other patient had bone lesions mistaken for osteomyelitis, and operation was done for this diagnosis. This patient was then given liver extract over an eleven months period with the occurrence of a remission characterized by symptomatic improvement, diminution in the size of the spleen and liver and improvement in the blood picture. Although lacking any knowledge of the *modus operandi*, the authors suggest liver extract in the treatment of Gaucher's disease.

Annals of Medical History, New York

5: 1-102 (Jan.) 1933

- An Introduction to History of Women in Medicine: I. Medical Women Before Christianity. Kate Campbell Hurd-Mead, Haddam, Conn.—p. 1.
- William Beaumont, M.D. (1785-1853). W. S. Miller, Madison, Wis.—p. 28.
- Washington's Medical Knowledge and Its Sources. W. B. Blanton, Richmond, Va.—p. 52.
- Why I Read Chaucer at Seventy. J. B. Herrick, Chicago.—p. 62.
- Paleopathologic Evidence of Paget's Disease. H. S. Denninger, Chicago.—p. 73.
- Jean Frédéric Lobstein: The First Professor of Pathology. A. Brunschwig, Chicago.—p. 82.
- Psychiatry in Historical Retrospect. F. M. Harrison, Brookline, Mass.—p. 85.

Annals of Surgery, Philadelphia

96: 961-1129 (Dec.) 1932

- Fissures of Lungs. F. B. Berry and E. P. Childs, New York.—p. 961.
Lingual Thyroid. R. V. Grace and C. Weeks, New York.—p. 973.
Salivary Calculi. R. H. Ivy and L. Curtis, Philadelphia.—p. 979.
*Acute Empyema of Thorax: Immediate and Late Results in a Hundred Consecutive Cases. C. B. Rentschler, Reading, Pa.—p. 987.
Orbital Myositis and Choked Disk in Exophthalmic Goiter. J. S. Friedenwald, Baltimore.—p. 995.
*Perinephric Abscess. C. C. Higgins and N. F. Hicken, Cleveland.—p. 998.
Tuberculosis of Upper Segment of Duplicated Kidney. W. Walters and J. B. Priestly, Rochester, Minn.—p. 1014.
Malignant Tumors of Kidney in Infancy and Childhood. C. G. Mixter, Boston.—p. 1017.
Sarcoma of Kidney of the Adult: Review of Twenty Cases with Report of Case. E. S. Judd and J. M. Donald Rochester, Minn.—p. 1028.
Stannoxyl in Treatment of Chronic Recurring Osteomyelitis. J. E. Klein, Chicago.—p. 1032.
Postpyloric Ulcer Under Therapeutic Management of Internist, Radiologist and Surgeon. F. W. Bancroft and C. W. Lester, New York.—p. 1036.
Length and Position of Vermiform Appendix: Study of Four Thousand Six Hundred and Eighty Specimens. D. C. Collins, Rochester, Minn.—p. 1044.
Surgical Possibilities in Treatment of Anterior Poliomyelitis. A. Whitman, New York.—p. 1049.
*Operative Treatment of Paralytic Genu Recurvatum. W. C. Campbell and J. I. Mitchell, Memphis, Tenn.—p. 1055.
Chronic Tuberculous Polyarthritis. M. B. Cooperman, Philadelphia.—p. 1065.
Krukenberg Tumor of Ovary. H. W. Stephens, San Francisco.—p. 1078.
*Treatment of Pott's Fracture: Report Based on Fifty Cases. D. Goldblatt, New York.—p. 1083.
*Progressive Postoperative Cutaneous Gangrene. H. A. Patterson, New York.—p. 1091.
Radical Operations for Carcinoma of Breast: Preliminary Excision of Tumor or Ablation of Breast. C. Eggers, New York.—p. 1098.
Traumatic Lesions of Arteries: Indications for Therapeutic Ligation of Veins. J. deJ. Pemberton and J. M. McCaughan, Rochester, Minn.—p. 1103.

Acute Empyema of Thorax.—Rentschler states that of the 100 consecutive cases of acute empyema surgically treated at the Reading Hospital from 1920 to 1930, 10 patients died; 44 were discharged with the wound completely healed; 24 with slight drainage from a granulating sinus, and 22 with drainage material, chiefly a rubber tube, still in the pleural opening. At the present time, of the 90 patients who left the hospital alive, 82 answered that they were well and active, 2 were draining with recurrences, 2 are dead, and 4 could not be traced. The author believes that the 10 per cent mortality can be lessened. The open method of treatment either by rib resection or by intercostal drainage after the diagnosis is established clinically, roentgenologically and by diagnostic aspiration is an expedient method of treatment. This is particularly true in a hospital where the assistant and nursing staff are on a rotating system. It seems certain that too quick drainage is definitely more harmful than good. An acute pneumonic process should be given ample time to subside. In an extremely ill patient, when drainage is indicated, the decompression should be gradual, by aspiration, by closed intercostal tube drainage, and later, if indicated, by rib resection with digital exploration of the cavity and the insertion of open tubes. In an old primary empyema when the patient has well compensated himself to the condition, not much is gained by anything else except partial rib resection.

Perinephric Abscess.—Higgins and Hicken report a clinical study of thirty-two cases of perinephric abscess. Etiologically, the disease may be of renal or nonrenal origin. Pyonephrosis, hydronephrosis, tuberculosis and carbuncles are the most common associated renal diseases, and bacterial metastases from peripheral and systemic foci of infection produce the nonrenal variety of perinephric infection. Fever, pain, leukocytosis and tenderness over the costovertebral angle are the most significant symptoms and these, together with a carefully elicited history, often lead to a correct diagnosis. Urinalysis is of some value in demonstrating associated renal disease but is of little importance in diagnosing perirenal disease of nonrenal origin. Roentgenography is useful in demonstrating the presence of coexisting diseases, but a diagnosis of perinephric abscess alone is seldom made by this method. The treatment is surgical and is governed by the condition of the patient, the location of the abscess, the presence of associated diseases and the complications. Conservative measures should be employed whenever possible.

Operative Treatment of Paralytic Genu Recurvatum.—Campbell and Mitchell point out that paralytic genu recurvatum results in most instances from a combination of muscular weakness and the static force of weight bearing. When due to anterior poliomyelitis, severe degrees of hyperextension of the knee occur usually in those patients in whom the paralysis is of a severe grade and wide distribution. The deformity is often associated with other deformities in the lower extremities and the trunk. The operation of fusion of the patella to the tibia in selected cases offers a technically simple and reliable method of treatment. The authors report seven cases, in one of which they performed the operation on both knees. The technic of the operation is as follows: An incision, 5 or 6 inches in length, is made over the patella and patellar ligament. The quadriceps tendon is divided above the patella by a Z-shaped incision. The capsule of the knee joint on either side of the patella is then incised and the patella retracted downward, exposing the interior of the joint. The ligamentum mucosum is divided and a portion of the infrapatellar fat pad is excised. The cartilage covering the lower third of the patella is removed to the spongy bone. The patellar tendon and the periosteum are stripped from the anterior surface of the patella for a distance of from one-half to three-fourths inch. A cavity is then made on the upper anterior aspect of the tibia by driving an osteotome vertically downward and prying forward the portion of the tibia anterior to the chisel. The patella is inserted into the depression on the tibia thus made, and the periosteum of the patella is sutured to the periosteum of the tibia about the margin of the cavity. The quadriceps tendon is reunited at neutral tension, the joint capsule sutured and the wound closed in layers. A cast is applied holding the knee at 160 degrees flexion. After eight weeks a brace with a stop-joint at the knee is applied and worn until roentgenograms demonstrate that bony fusion is complete. A modification of the original technic, in which the quadriceps tendon is not divided, has been employed by one of the authors in three cases.

Treatment of Pott's Fracture.—Goldblatt's series of fifty patients indicates that Pott's fracture is essentially an injury of adult life. The forces active in producing Pott's fracture in an adult will produce an epiphyseal separation of the lower end of the tibia in a child. The ratio of incidence among males and females was approximately three to one. Displaced or type I fractures require meticulous reduction and alignment to restore the highly specialized action of this joint and prevent dysfunction that may follow a poorly or irregularly healing cartilage, as a result of incorrect coaptation. Compounding with infection in the shaft of the bone is a regrettable occurrence; in a joint fracture it may become a tragedy, the ability to arrest infection being in indirect proportion to the duration of contamination. When maintenance of reduction is the difficulty, one should look for a fracture of the medial or interosseous malleolus of the tibia or a tearing away of the posterior lip of this bone. The use of skeletal traction may then be necessary. When this fails, operative removal of the fragment is indicated. The use of molded plaster-of-paris splints instead of a circular encasement permits visual and tactile inspection of the fractured site and promotes early passive activity. Physical therapy is an integral part of the treatment and should be concomitant with, rather than subsequent to, immobilization. Function may be consistent with deformity in a shaft fracture but is decidedly inconsistent with a joint fracture. Old fractures of the ankle with malunion and ankylosis require open correction and may prove disappointing. Nonunion here is a rarity. When it does occur it denotes interposition of soft parts, tendon, fascia or curled periosteum. Often under the best conditions, with the best of care, in frankly displaced or type I fractures, swelling and pain in the ankle will persist for a long time, as well as a widening of the joint, because of a tear of the lower tibio-fibular ligament.

Progressive Postoperative Cutaneous Gangrene.—Patterson reports a personally observed case of progressive postoperative gangrene of the skin, of a type which represents a clinical entity. The lesion is unusual. It has a characteristic appearance, bacteriology and clinical course. The bacteriologic observations in his patient corresponded closely to those of Meleney. The process is produced by the symbiotic activity

of a small variety of streptococcus that prefers a low oxygen tension, and a staphylococcus. Although developing in a thoracotomy incision, the streptococcus in this case (as in most reported cases) was thought to be of intestinal origin. Conservative measures are of no help whatever in dealing with this type of infection. The treatment of choice is early wide excision, with cautery or with scalpel. Adequate excision results in prompt cure. The use of tension sutures in drained incisions predisposes to the development of this alarming complication.

Archives of Surgery, Chicago

26:1-168 (Jan.) 1933

- Experimental Obstructive Jaundice: Its Effect on Fibrinogen and Coagulation of Blood. W. Moss, New Orleans.—p. 1.
Roentgenology of Experimental Mesenteric Vascular Occlusion. J. S. Hibbard, P. C. Swenson and A. G. Levin, New York.—p. 20.
*Establishment of Circulation in Tubed Skin Flaps: Experimental Study. W. German, New Haven, Conn.; E. M. Finesilver, Newark, N. J., and J. S. Davis, Baltimore.—p. 27.
*Path of Infection in Perinephritis. H. C. Rolnick, Chicago.—p. 41.
Resection of Sensory Nerves of Perineum in Certain Irritative Conditions of External Genitalia. J. R. Learmonth, H. Montgomery and V. S. Counsellor, Rochester, Minn.—p. 50.
*Acute Abdominal Symptoms in Arachnidism. C. B. Morton, University, Va.—p. 64.
*Ligation of Saphenous Vein: Report on Two Hundred Ambulatory Operations. G. de Takáts and L. Quillin, Chicago.—p. 72.
*Tribrom-Ethanol as Anesthetic for General Surgery. H. K. Ransom, Ann Arbor, Mich.—p. 89.
Splenectomy in Treatment of Hemorrhagic Purpura. J. M. Askey and C. G. Toland, Los Angeles.—p. 103.
Passage of Cholesterol Through Mucosa of Gallbladder. A. L. Wilkie and H. Doubilet, Montreal, Canada.—p. 110.
Effects on Composition of Blood of Physiologic Solution of Sodium Chloride When Introduced by Intraperitoneal Injection and by Stomach Tube in Presence of Low Blood Pressure. J. W. Beard, H. Wilson and A. Blalock, Nashville, Tenn.—p. 122.
Absorption of Dextrose from Colon. W. W. Eheling, Philadelphia.—p. 134.
Selective Staining of Diseased Areas in Cartilage by Intra-Articular Injection of Dyes: Experimental Cadaver Study, with Especial Reference to Arthroscopy. M. S. Burman, New York.—p. 153.
Forty-Ninth Report of Progress in Orthopedic Surgery. J. G. Kuhns, E. F. Cave, S. M. Roberts and J. S. Barr, Boston; J. A. Freiberg, Cincinnati; J. E. Milgram, New York; G. Perkins, London, England, and P. D. Wilson, Boston.—p. 160.

Circulation in Tubed Skin Flaps.—German and his associates have successfully tried out the clinical application of the information obtained in their experimental study on tubed flaps during the last three years. It has also been of value in determining the time of division of the pedicles in those long pedicled flaps which are raised and without being tubed are immediately sutured back into the bed from which they came until ready for transfer. The longer the tubed flap is allowed to remain intact, within certain limits, the more stable the blood supply becomes, but from their observations, both clinical and experimental, they are convinced that the establishment of circulation in tubed skin flaps occurs considerably earlier than was previously thought possible and consequently that it is safe to divide the pedicles sooner.

Infection in Perinephritis.—Rolnick reports seven cases illustrating the various modes of invasion in perinephritis. One of the paths of extension of infection is that along the periureteral sheath, of which little mention has been made in the literature. His experiments for the purpose of determining the accuracy of the various clinical observations are as follows: Fresh postmortem specimens of kidneys, ureters and bladders were used. The specimens were from both males and females, children and adults. In the male the adnexa were attached. A contrast fluid of from a 25 to 30 per cent solution of sodium bromide was injected into the ureteral sheath, and the specimen was then roentgenographed. Injections were made in the fascia at the base of the bladder near the ureter or within the sheath of the seminal vesicle. In others, injection was made directly into the ureteral sheath, beginning at the juxtavesicular portion of the ureter and extending upward. In a few specimens the injections within the sheath were begun at the renal pelvis and carried downward. In practically all instances, the contrast fluid could be forced readily upward or downward along the sheath of the ureter. In the female, infiltration of the loose tissues at the base of the bladder permitted the forcing up and milking upward of the contrast medium in the ureteral sheath. The author believes that his clinical and experimental observations should be of particular interest to gynecologists

and urologists. There are many clinical observations by both gynecologists and urologists of adnexal and pelvic infection causing infection of the upper urinary tract. The demonstration of extension of infection along the sheath of the ureter is of decided clinical importance. Bands and adhesions about the ureter and renal pelvis, periureteritis, peripyelitis and perinephritis, acute and chronic and of varying degrees of severity, including perinephric abscess, may result from extension of infection along the sheath of the ureter secondary to pelvic infection in both male and female.

Acute Abdominal Symptoms in Arachnidism.—Morton presents six cases of arachnidism, a poisoning from the bite of *Latrodectus mactans*, or "black widow" spider. In some instances the spider bite had occurred without the patient's knowledge. The symptoms were characterized by the acute onset of severe abdominal pain, nausea and vomiting, boardlike rigidity of the abdominal muscles with more or less tenderness, and elevation in the patient's temperature and leukocytes. The author draws attention to the ease with which the mistaken diagnosis of acute surgical abdominal disease might be made and the patient subjected to an unnecessary exploratory laparotomy.

Ligation of Saphenous Vein.—On the basis of 200 ambulatory vein ligations combined with the injection treatment for varicose veins, de Takáts and Quillin think that this procedure has a definite place in the treatment for this condition. The high saphenous ligation protects the treated veins from the fluctuations of abdominal and hydrostatic pressure, thus preventing canalization of the thrombi. It also reduces the necessary number of injections and places the occluding ligature close to the saphenofemoral junction. By insisting on a short proximal stump and on ambulatory management, they can report no embolism in the entire series. The complications reported in their series all seem avoidable with growing experience. The end-results of the operation combined with injections show a far smaller percentage of recurrences than those obtained with any other procedure in the treatment for varicose veins. Their technic for ambulatory vein ligation is as follows: In the standing position the course of the vein is marked out with a 2 per cent solution of brilliant green. The skin is shaved dry just before the operation and prepared with ether, iodine and alcohol. The line of incision in high saphenous ligations runs about a handwidth distally and parallel to Poupert's ligament and should start mesially to the palpable femoral artery. The line of incision is infiltrated with a 0.5 per cent solution of procaine hydrochloride with 3 drops of 1:1,000 epinephrine to each ounce. Only a superficial subcutaneous infiltration is made, and repeated aspirations are made for blood because care must be taken not to inject any procaine hydrochloride intravenously. In one patient only a few drops of procaine hydrochloride were sufficient to produce pallor, tachycardia and numbness of the lips and fingers. After an interval of about five minutes, for complete anesthesia, incision is made through the skin and subcutaneous fat. In some patients a strong tortuous anterior branch lies immediately under the skin and needs no further exposure. This may not be the main trunk but a collateral from the superficial epigastric, overcoming a previous iliac block. At this high level the main trunk lies below the superficial fascia and has to be exposed at a depth of from 2 to 4 cm., or sometimes even more. When the main vein is exposed, a perivenous injection is made on both sides of the vein. Two ligations, made by curved artery forceps or an aneurysm needle armed with number 1 chromic catgut insinuated under the vein twice, are tied at a distance of 3 cm. or more and the segment of vein is lifted up to detect communicating branches from the deep veins, which should also be carefully tied, as they may produce a profuse hemorrhage. It is important to place the proximal ligature as close to the femoral junction as possible, a short stump being left. The segment of vein is then removed and used for bacteriologic study. Before the wound is closed, the patient is asked to cough a few times to catch, if necessary, additional bleeders. The skin is closed with interrupted dermal sutures. The skin around the incision is painted with a mastic solution (gum mastic 40 Gm., benzene 60 cc., castor oil 20 drops, and sufficient distilled water to make 100 cc.) and gauze is stuck to the skin with the solution. The patients return for inspection in forty-eight hours, and the stitches are

removed on the eighth day. They may return to work after the first inspection. They should not stay in bed during the day for any time.

Tribrom-Ethanol as Anesthetic for General Surgery.—Ransom analyzes a representative group of 430 surgical cases in which he used tribrom-ethanol for anesthesia or basal narcosis. The quality of surgical anesthesia produced by tribrom-ethanol unassisted or supplemented by gas or ether was entirely satisfactory. The induction from the standpoint of the patient is probably less unpleasant than that attendant on any other form of anesthetic. Some form of supplemental anesthetic, such as nitrous oxide and oxygen or ether, was required in 70 per cent of the cases, the operation in the remaining 30 per cent being performed without reinforcement. While there was usually a preliminary fall in both systolic and diastolic blood pressure, this did not seem to be sufficient to cause alarm, and at the conclusion of the operation the pressure had practically reached the preoperative level. Falls in blood pressure were satisfactorily combated with ephedrine or epinephrine. When nitrous oxide and oxygen were employed as a supplemental agent, the percentage of oxygen in the mixture could be increased to about twice the amount possible when used with nitrous oxide alone. Likewise, if ether was used to supplement the tribrom-ethanol, the total quantity employed during the operation was considerably less than would have been required for straight ether anesthesia. The average reaction time was two and one-half hours. The majority of the patients reacted between one and three hours, while about 23 per cent reacted in less than one hour. Of the twenty-two operative deaths occurring in the series, only four seemed to have any definite relation to the type of anesthesia. In the entire series there were only eight cases of postoperative pulmonary complications which seemed in any probability attributable to the tribrom-ethanol. Of these, four were of pneumonia, and of these four post-operative pneumonias two were fatal. In order to avoid unnecessary dangers, it seems that considerable care should be exercised in selecting cases. If this is done, tribrom-ethanol, in the author's opinion, is not only a safe but an important addition to the anesthetic armamentarium.

Arkansas Medical Society Journal, Little Rock

29: 165-179 (Jan.) 1933

Convulsive Seizures: Their Treatment. G. E. Tarkington, Hot Springs National Park.—p. 165.

Spinal Anesthesia. C. B. Capel, Pine Bluff.—p. 168.

Canadian Medical Association Journal, Montreal

28: 1-122 (Jan.) 1933

Diseases of Duodenum and Their Treatment. D. C. Balfour, Rochester, Minn.—p. 2.

Atypical Forms of Encephalitis. A. H. Gordon, Montreal.—p. 8.

Angina Pectoris in Young People, Associated with Rheumatic Carditis: Report of Case. W. W. Eakin, Montreal.—p. 13.

Pneumoperitoneum Following Laparotomy. F. I. Lewis, Toronto.—p. 18.

Thyroid, with Hyperthyroidism in Albino. Evelyn M. Anderson, Montreal.—p. 23.

Congenital Hypertrophy of the Thyroid Gland: Report of Case. D. S. Mitchell and R. R. Struthers, Montreal.—p. 27.

Critical Analysis of Radiotherapy in Treatment of Malignant Tumors. G. Forsell, Stockholm, Sweden.—p. 30.

Prognosis in Cardiac Disorders. R. D. Rudolf, Toronto.—p. 35.

Sympathectomy for Tic Douloureux. R. E. McKechnie, Vancouver, B. C.—p. 41.

Occipitoposterior Position. J. D. McQueen, Winnipeg, Manit.—p. 42.

Some Observations in Treatment of Hyperemesis Gravidarum: Case Reports. J. Mann, Toronto.—p. 48.

Spinal Anesthesia in Children. C. I. Junkin, Toronto.—p. 51.

Treatment of Chronic Nasal Sinusitis. J. G. Hunt, London, Ont.—p. 54.

Transfusion of Blood: Report of Two Hundred and Six Cases from Clinic of the Woman's Hospital in the State of New York. W. R. Esdale, Ottawa, Ont.—p. 57.

Biopsy. B. T. Simpson, Buffalo.—p. 62.

Pneumoperitoneum Following Laparotomy.—Lewis points out that the possibility of air remaining in the abdominal cavity after suture of the peritoneum appears to have been generally overlooked. Factors influencing the enclosure of air in the peritoneum are: the type of anesthesia used, supplemental anesthesia, length and position of the abdominal incision, position of the patient on the operating table and drainage of the peritoneal cavity with tubes. From experiments on animals and from one observation on a patient in whom 1,000 cc. of air was introduced into the peritoneal cavity following aspiration of ascitic fluid, the author observed that the air was

completely absorbed from the peritoneal cavity in ten days. From his observation of twenty-five cases following spinal anesthesia and fifteen following gas-oxygen and ether, the author concludes that pneumoperitoneum after laparotomy is of frequent occurrence in those cases in which spinal anesthesia alone is used. It is occasionally found after operations in which general inhalation anesthesia is used. It is of great importance that the possibility of its presence be recognized for the correct diagnosis of postoperative complications and to allow appropriate treatment of the symptoms due to its presence. The production of postoperative pneumoperitoneum can be prevented by bringing the table to a flat position just previous to the closure of the peritoneum and by forcing respirations for a few moments with carbon dioxide. Abdominal percussion is an unreliable method of demonstrating pneumoperitoneum. Distention of the right large intestine is frequently the cause of loss of liver dulness. Delay in absorption of the enclosed air is due to the position in which the patients lie in bed.

Occipitoposterior Position.—From the study of the records of 654 private cases admitted consecutively, McQueen concludes that in the management and treatment of occipitoposterior positions the following points should be taken into consideration: 1. Early diagnosis is necessary for proper management. 2. Successful labor often depends on the conservation of the patient's energies during the first stage. 3. The obstetrician should be constantly aware of the progress of labor. 4. Unnecessary operative intervention should at all times be deprecated. 5. When no disproportion exists, an occipitoposterior position will, with average uterine contractions, in the majority of cases, rotate spontaneously to the front and be delivered naturally or with the aid of low forceps. 6. When intervention becomes necessary, manual rotation, when performed at the opportune time, would appear to be the most natural, simple and the safest procedure to follow. 7. Forceps should not be applied until the head is well engaged.

Spinal Anesthesia in Children.—Junkin utilized spinal anesthesia in performing various orthopedic operations on the lower extremities of children, such as Hoke's arthrodeses, tendon fixations, excisions of the knee, amputations, reductions of congenital dislocations of the hip, osteotomies of the femurs and tibias, reductions of fractures of the femur, fixations of the hip, and sequestrectomies of varying extent. His technic of lumbar puncture and injection is the same as that in general use for adults. He presents a table giving the dosage and premedication necessary for children up to the age of 17 years. He concludes that spinal anesthesia is as safe and as satisfactory in children as in adults, if not more so. A preliminary sedative is an important and necessary adjunct to successful anesthesia. Spinal anesthesia is definitely indicated for operations below the diaphragm in children suffering from advanced pulmonary or renal disease. Spinal anesthesia is to be preferred to other anesthetics for splenectomies, nephrectomies, lumbar sympathectomies and intestinal obstructions, and for orthopedic operations on the lower limbs in which complete muscular relaxation is desirable.

Chronic Nasal Sinusitis.—According to Hunt, if the growing spirit of pessimism in regard to their ability to cure chronic sinusitis is to be exorcised, there must be a more general recognition by rhinologists that the real cause of both local catarrhal and remote organic and constitutional symptoms is the presence within certain of the paranasal cells of a germ-infested, fibrosed or polypoid mucosa; that medical treatment of the nasal cavity is purely symptomatic in character and it is absurd and immoral to raise false hopes of a cure by this means when the disease is well established; that nasal operations for the relief of obstructive breathing caused by chronic sinusitis are irrational, and, when associated with postoperative packing, dangerous. The indiscriminate attempt to cure all types of chronic antrum disease by nasal puncture and lavage is more illogical than trying to flush polyps from the nasal cavity or diseased tonsils from their bed. Success in radical sinus surgery will vary in direct proportion with the ability of the surgeon to locate the diseased cells and his thoroughness in removing all the infected mucosa of all affected cells.

Transfusion of Blood.—Esdale presents a statistical study of 206 transfusions in gynecologic operative cases, in which he employed the direct method, using the Unger and Scannel

machines. The average amount of blood used was 500 cc. All interns of recognized hospitals should be experts in blood typing and transfusion, preferably by the direct method. Blood transfusion overcomes the shock of hemorrhage. Acacia dextrose is an effective means for combating surgical shock and should be given early, before the vital centers are damaged; it is indicated for an unconscious patient. By the transfusion of 500 cc. of blood an increase of half a million red blood cells and a 10 per cent increase in hemoglobin may be anticipated. The white blood count is not appreciably affected by transfusion. It is safe to perform transfusion on a patient suffering from an internal hemorrhage before operation, as the blood pressure is not increased. Reactions occur in 28 per cent, mostly chilly sensations; 4 per cent are severe in character.

Delaware State Medical Journal, Wilmington

5:1-22 (Jan.) 1933

- Congenital Syphilis. M. J. Exner, New York.—p. 1.
*Intra-Urethral Correction of Urinary Bladder Neck Obstruction. B. S. Vallett, Wilmington.—p. 8.

Intra-Urethral Correction of Urinary Bladder Neck Obstruction.—Vallett reports twenty cases of intra-urethral resection and reviews the early results. Intra-urethral resection of bladder neck obstructions is undergoing a thorough trial. In his opinion the technic of resection, as now practiced according to the McCarthy and Davis method, is undoubtedly the most valuable adjunctive treatment in prostatism since Young's classic perineal operation. The method greatly shortens hospitalization and is the method of choice in many poor risks. Infection and not hemorrhage is the bugbear of intra-urethral resection and must be combated by vasectomy and a meticulous bladder toilet before operation. The same pre-operative care as for open operation should be given. Intra-urethral resection is the operation of choice in carcinoma of the prostate, relieving obstruction, controlling hemorrhage, and causing retardation and regression of the growth. Intra-urethral resection is less likely than open operation to disturb the sexual function. Intra-urethral resection will have a mortality rate as high as or higher than the open operation, owing to the fact that more men will submit to it than to open operation. Physical examination of all men over 45 is not complete without the test for residual urine. In the final solution of the problem of prostatism, prophylaxis will play a major part; that is, early detection of cases and possibly the administration of an inhibiting hormone.

Georgia Medical Association Journal, Atlanta

22:1-42 (Jan.) 1933

- Rickets. M. Blanchard, Columbus.—p. 1.
Common Cold. A. J. Waring, Savannah.—p. 4.
*Intracranial Birth Hemorrhages. C. M. Burpee, Augusta.—p. 7.
Carcinoma of Colon. M. J. Egan, Savannah.—p. 15.

Intracranial Birth Hemorrhages.—According to Burpee, intracranial hemorrhages are responsible for many of the deaths that occur during the first few days of life and most of the paralyses seen in childhood. They are frequently not recognized at birth. They occur most frequently in the premature infant or the infant subjected to a long and difficult labor, and particularly when instrumentation, podalic version with breach extraction or solution of pituitary is used to terminate this type of labor. They are always due to intracranial trauma. The hemorrhage may occur anywhere inside the skull, but subdural hemorrhages are the most important. The symptoms depend on the size and location of the hemorrhage. The prognosis depends not only on the size and location of the hemorrhage but on the type of treatment instituted. The treatment consists in prevention, as far as possible, by appropriate prenatal care. All prolonged or difficult labors should be considered potential cases of intracranial hemorrhage and treated as such. Respiration should be stimulated by a mixture of carbon dioxide and oxygen rather than by violent resuscitation measures. In all cases of intracranial hemorrhage or suspected intracranial hemorrhage, absolute rest should be prescribed, and external heat should be applied when necessary. The increased intracranial pressure should be relieved and the respiration maintained. The body fluids should be maintained and, above all, the infant should be watched closely. In large supratentorial hemorrhages the blood clot may be removed if adequate surgical facilities are available.

Journal of Bacteriology, Baltimore

25:1-100 (Jan.) 1933

- Antony van Leeuwenhoek: The Three Hundredth Anniversary of His Birth. E. B. Fred, Madison, Wis.—p. 1.

Journal of Bone and Joint Surgery, Boston

15:1-278 (Jan.) 1933

- Operative Arrestment of Longitudinal Growth of Bones in Treatment of Deformities. D. B. Phemister, Chicago.—p. 1.
Early Treatment of Congenital Dislocation of Hip. V. Putti, Bologna, Italy.—p. 16.
*Operative Fixation of Tuberculous Hips in Children: End-Result Study of Thirty-Three Patients from Orthopedic Department of Children's Hospital. J. C. Wilson, Los Angeles.—p. 22.
Report of Seventeen Cases of Tuberculosis of Hip Fused by Wilson Method. L. Alpert, Middleboro, Mass.—p. 48.
Combined Intra-Articular and Extra-Articular Arthrodesis for Tuberculosis of Hip Joint. M. S. Henderson, Rochester, Minn.—p. 51.
Treatment of Osteomyelitis by Bacteriophage. F. H. Albee, New York.—p. 58.
Production of Chronic Arthritis by Injection of Weak Acids, Alkalies, Distilled Water and Salt Solution into Joints. J. A. Key, St. Louis.—p. 67.
Maggots in Treatment of Osteomyelitis: Simple Inexpensive Method. D. C. McKeever, Kansas City, Mo.—p. 85.
Use of Colloidal Sulphur in Treatment of Arthritis. T. F. Wheeldon and R. J. Main, Richmond, Va.—p. 94.
Short Metatarsal Bones and Their Relation to Poliomyelitis. A. B. Ferguson, New York.—p. 98.
Amputation Stumps of Lower Extremity. N. T. Kirk, Washington, D. C.—p. 101.
*Certain Arthritic Disturbances Associated with Parathyroidism. R. V. Funsten, University, Va.—p. 112.
Parathyroidism in Reference to Orthopedic Surgery. M. Ballin, Detroit.—p. 120.
*Hyperparathyroidism: Distinct Disease Entity. W. Bauer, Boston.—p. 135.
*Role of Parathyroid Glands in Diseases Associated with Demineralization of Human Skeleton. E. L. Compere, Chicago.—p. 142.
Considerations on Use of Parathyroidectomy for Arthritis. I. W. Nachlas, Baltimore.—p. 151.
Correction of Compressed and Impacted Fractures of Vertebrae. J. Dunlop and C. H. Parker, Pasadena, Calif.—p. 153.
*Operation to Make Posterior Bone Block at Ankle to Limit Foot-Drop. A. B. Gill, Philadelphia.—p. 166.
Congenital Metatarsus Varus. C. W. Peabody and F. Muro, Detroit.—p. 171.
Paget's Osteitis Deformans in Relation to Cardiovascular Disease. S. M. Cone, Pikesville, Md.—p. 190.
Osteitis Tuberculosis Multiplex Cystica (Jungling): Report of Case Involving the Larger Long Bones with Complete Proof of Its Tuberculous Etiology: Review of Literature. G. S. van Alstyne and G. H. Gowen, Chicago.—p. 193.
Fracture of Capitellum and Trochlea, Combined with Fracture of External Humeral Condyle. R. C. Robertson and F. B. Bogart, Chattanooga, Tenn.—p. 206.
Stresses in Curved Column. F. A. Chandler, Chicago.—p. 214.
Stability of Hip Following Whitman's Reconstruction Operation. A. Inclan, Havana, Cuba.—p. 215.
Lengthening of Femur with Simultaneous Correction of Coxa Vara. S. L. Haas, San Francisco.—p. 219.
Osteochondritis of Internal Cuneiform. J. Buchman, Brooklyn.—p. 225.
Operation for Recurrent Dislocation of Shoulder. P. W. Roberts, New York.—p. 233.
Case of Complete Dislocation Between Fifth and Sixth Cervical Vertebrae, Without Fracture. E. N. Reed, Santa Monica, Calif.—p. 235.
Dislocation of Single Cuneiform Bone. D. F. Clark and H. A. Quint, Evanston, Ill.—p. 237.
Carpometacarpal Arthroplasty of Thumb. R. Patterson, Knoxville, Tenn.—p. 240.
Old Dislocation of Shoulder: New Instrument for Reduction. W. A. Clark, Pasadena, Calif.—p. 242.
Improved Apparatus for Russell Traction. D. O. Chamberlain, Brooklyn.—p. 246.
Modification and Extended Uses of Bradford Frame. G. M. Logan, Akron, Ohio.—p. 248.
Operative Fixation of Tuberculous Hips in Children.
—Wilson reports the results of iliofemoroplasty in thirty-three children, who have been under observation from one to eight years. An additional ten to fifteen years of observation will be essential before it can be definitely recommended that all tuberculous hips in children should be fused in a position of 15 degrees of flexion and 10 degrees of abduction. He believes that early fusion of tuberculous joints conserves the growing elements of the bone, thereby eliminating the disability due to shortening. He has confirmed the observation of Hibbs that fusion of the bone flap or strut is followed by consolidation of the diseased area. Joint tuberculosis will heal rapidly when motion is eliminated. This may be successfully accomplished by iliofemoroplasty. Draining sinuses are not a contraindication to iliofemoroplasty. The sinuses will close when the bone and joint lesion is healed. Secondary infection is of no practical importance so far as the operation itself is concerned.

The general physical condition of the patient is uniformly good after ankylosis of the diseased joint takes place. Iliofemoro-plasty is not a difficult technical procedure and it may be done without danger to life. Iliofemoro-plasty is suitable for any child, irrespective of age, who is suffering from tuberculosis of the hip joint and is known to be a good surgical risk.

Arthritic Disturbances Associated with Parathyroidism.—Funsten performed parathyroidectomy in fourteen of twenty-six cases of arthritis presenting symptoms of parathyroidism. Only one of the cases failed to show improvement. Nine patients showed marked improvement. Within a day or two following operation, the sensation of stiffness in the joints began to disappear and there was less pain and more ease of motion. Four patients were moderately improved. The shortest postoperative observation was four months. The longest period of observation has been eighteen months. The remaining twelve patients (the poor operative risks and mild cases) were treated conservatively with cod liver oil concentrate, calcium gluconate, physical therapy and orthopedic appliances. Of these, eight improved and four showed no improvement. The author concludes that parathyroid disease is frequent in arthritis, either as a primary cause or secondarily as the result of a common etiologic factor. It may be recognized by symptoms of paroxysmal pain in the spine and abdomen, deformity of the spine and roentgen evidence of demineralization. The diagnosis may be substantiated by means of repeated blood and urine calcium determinations and chronaxia.

Hyperparathyroidism.—Bauer states that hyperparathyroidism or generalized osteitis fibrosa cystica is a clear-cut, distinct disease entity caused by an increased secretion of parathyroid hormone. The fact that it is a disease of endocrine origin implies that the entire skeleton is affected. Arthritis and Paget's disease are never generalized skeletal diseases. This fact alone argues against their being of parathyroid origin. Hyperparathyroidism is a disease characterized by definite alterations in the calcium and phosphorus metabolism, such as an elevated serum calcium, a decreased serum phosphorus, and an increased calcium and phosphorus excretion. Some of the characteristic symptoms and signs of hyperparathyroidism are polydipsia, polyuria, weakness and loss of strength, constipation, loss of appetite, loss of weight, indefinite muscle and joint aches and pains, bone tenderness, frequent fractures, decreased excitability of the nerves, skeletal shortening, kyphosis, kidney or ureteral stones, generalized decalcification, bone tumors, multiple bone cysts, fish-type vertebral bodies, and frequently anemia with leukopenia. The author concludes that until there is sufficient evidence to prove that Paget's disease and certain cases of arthritis are due to hyperparathyroidism, there is no justification in advising parathyroidectomy in patients with either disease.

Parathyroids in Diseases with Demineralization of Skeleton.—According to Compere, generalized osteitis fibrosa may be differentiated from other skeletal dystrophies that are clinically similar. This condition is characterized by a high serum calcium content, low plasma phosphates, increased excretion of calcium in the urine, and negative calcium balance; an adenomatous tumor of one or more parathyroids has always been found at postmortem examination and nearly always at operation, while the remaining glands are normal in size and structure. There is no good evidence that Paget's disease is caused by hyperparathyroidism. In this condition the calcium and inorganic phosphate contents of the blood are normal; and the parathyroids are usually found to be entirely normal in size and in microscopic structure. Ankylosing polyarthritis is probably not caused by hyperparathyroidism, because although the serum calcium may be slightly above normal, the inorganic phosphates of the plasma are normal; the calcium balance is positive; the parathyroids have been reported enlarged, but usually this enlargement was symmetrical, involving all the parathyroids similar to that reported in cases of rickets or low calcium osteomalacia. In experimental animals the addition of vitamin D and of adequate calcium and phosphorus to the diet has resulted in a decrease in the size of the enlarged parathyroids as well as healing of the skeletal disease. Parathyroidectomy in cases of ankylosing polyarthritis or of Paget's disease is not a justifiable procedure. Demineralization of the skeleton in polyarthritis may be accounted for as atrophy of disuse.

Posterior Bone Block at Ankle, Limiting Foot-Drop.—Gill uses a posterior bone block operation for foot-drop that has not been corrected at the time of a fusion operation and in cases in which a strong achilles tendon is not balanced by anterior muscles. His technic is as follows: A skin incision is made parallel to the achilles tendon. The latter is exposed and divided Z-fashion. An incision is made longitudinally through the underlying fat, which is scraped to both sides to expose the posterior aspect of the ankle joint and the top of the os calcis. The ankle joint is opened. The foot is dorsiflexed to the limit of motion. With a broad, thin osteotome the cartilage, with a thin portion of bone of the astragalus, is lifted upward from behind until it comes into contact with the posterior lip of the tibia. The angle of the wedge-like space thus formed lies well forward beneath the cartilage and in front of the posterior lip of the tibia. A wedge-shaped piece of bone is then removed from the upper aspect of the os calcis and is driven firmly into the space beneath the superior portion of the astragalus. It will then be observed that the foot is maintained firmly in a position of dorsiflexion. The achilles tendon is sutured with the necessary amount of lengthening. The skin wound is closed with number 0 or 1 twenty-day chromic gut. The foot is dressed in plaster in slight dorsiflexion for three months.

Journal of General Physiology, Baltimore

16: 397-557 (Jan. 20) 1933

- Action of Roentgen Rays on Epithelial Tissues and Associated Bacteria. M. G. Brown, J. M. Luck, Grace Sheets and C. V. Taylor, Stanford University, Calif.—p. 397.
Visual Intensity Discrimination of Honey Bee. E. Wolf, Cambridge, Mass.—p. 407.
Distribution of Action Currents Produced by Heart Muscle and Other Excitable Tissues Immersed in Extensive Conducting Mediums. F. N. Wilson, A. G. Macleod and P. S. Barker, Ann Arbor, Mich.—p. 423.
Electrokinetic Phenomena: X. Electric Mobility and Charge of Proteins in Alcohol Water Mixtures. Janet Daniel, Cambridge, Mass.—p. 457.
Rate of Oxygen Consumption by Fertilized and Unfertilized Eggs: IV. Chaetopterus and Arbacia Punctulata. D. M. Whitaker, Stanford University, Calif.—p. 475.
Id.: V. Comparisons and Interpretation. D. M. Whitaker, Stanford University, Calif.—p. 497.
Kinetics of Penetration: V. Kinetics of Model as Related to Steady State. W. J. V. Osterhout, New York.—p. 529.

Journal of Immunology, Baltimore

24: 1-91 (Jan.) 1933

- Use of Intradermal Test in Diagnosis of Trichiniasis. O. R. McCoy, J. J. Miller, Jr., Rochester, N. Y., and R. D. Friedlander, San Francisco.—p. 1.
Further Studies in Serum Sickness: IV. Effect of Concentration of Normal Horse Serum on Antibody Response. L. Tuft, with technical assistance of Anna M. Rule, Philadelphia.—p. 25.
Reticulo-Endothelial System and Source of Opsonin. A. R. Elvidge, Montreal, Canada.—p. 31.
Studies of Scarlet Fever: I. Allergic Versus Toxin-Antitoxin Hypothesis. S. B. Hooker, Boston.—p. 65.
Studies in Tobacco Hypersensitivity: I. Comparison Between Reactions to Nicotine and to Denicotinized Tobacco Extract. Marion B. Salzberger, with assistance of B. Scholder and E. Feit, New York.—p. 85.

Journal of Industrial Hygiene, Baltimore

15: 1-56 (Jan.) 1933

- Further Research on Production of Carbon Monoxide from Paint in Sealed Compartments. S. F. Dudley, F. G. Edmed and R. C. Frederick, Greenwich, Conn.—p. 1.
Influence of Respiration and Transpiration on Ionic Content of Air of Occupied Rooms. C. P. Yaglou, L. Claribel Benjamin, and A. Brandt, Boston.—p. 8.
Importance of Velocity Characteristics in Design of Local Exhaust Hoods. J. M. Dallavalle.—p. 18.
*Study of Seventy-Eight Workers Exposed to Inhalation of Cryolite Dust. S. V. Gudjonsson, Copenhagen, Denmark.—p. 27.
Air Cooling by Conduction and Convection. W. S. Weeks and F. G. de Berry, Berkeley, Calif.—p. 34.
Control of Silicosis Hazard in Hard Rock Industries: IV. Application of Kelley Trap to Underground Drilling Operations. T. Hatch, Boston; J. W. Fehnel, New York; H. Warren, Boston, and G. S. Kelley, New York.—p. 41.

Inhalation of Cryolite Dust.—On examination of the local conditions in a factory where cryolite is crushed, Gudjonsson found that most of the working processes were accompanied by the production of mineral dust, cryolite, containing only 3 per cent of quartz, and that in some parts of the plant the dust production was marked. On examination of seventy-eight workers who had been employed in the factory for over two years, forty showed various degrees of silicosis—up to the

second stage. The development of silicosis appeared to be in direct relation to the time the workers affected had been working in the place, and not in direct relation to their age. The total sick rate during the last years has increased among the workers with silicosis. This applies especially to diseases of the lungs—in this group of diseases the total sick rate is more than three times as high among silicotic workers as among nonsilicotic workers. Signs of pulmonary tuberculosis were demonstrated in four of the workers examined, but they were not confined to silicotic workers.

Journal of Pediatrics, St. Louis

2: 1-132 (Jan.) 1933

- Pediatric Psychology and Child Guidance Movement. J. Brennemann, Chicago.—p. 1.
Congenital Occlusion of Duodenum and Small Intestine: Clinical Consideration with Report of Two Successful Cases. R. F. Carter, New York.—p. 27.
Significance of Obscure Abdominal Pain in the Older Child. F. W. Schlutz, Chicago.—p. 41.
What is Dementia Praecox? Esther L. Richards, Baltimore.—p. 46.
Parasitic Infections in New Orleans, Based on Cross Section of Charity and Welfare Clinic Patients, with Especial Reference to Children's Clinics. E. C. Faust, New Orleans.—p. 53.
Chloroma. P. Rosenblum, Chicago.—p. 59.
Antiques of Pediatric Interest. T. G. H. Drake, Toronto, Canada.—p. 68.
Teeth and Nourishment. G. S. Millberry, San Francisco.—p. 70.

Journal of Pharmacology & Exper. Therap., Baltimore

47: 1-139 (Jan.) 1933

- *Anesthetic Action of Divinyl Oxide on Humans. S. Gelfan and I. R. Bell, Edmonton, Alta., Canada.—p. 1.
*Anesthetic Action of Divinyl Oxide in Animals. C. D. Leake, P. K. Knoefel and A. E. Guedel, San Francisco.—p. 5.
Administration of Drugs into Cerebral Ventricles of Monkeys: Pituitrin, Certain Pituitary Fractions, Pitressin, Pitocin, Histamine, Acetyl Choline and Pilocarpine. R. U. Light and S. M. Byssbe, Boston.—p. 17.
Response of Rabbit to Pilocarpine Administered into Cerebrospinal Fluid. R. U. Light, C. C. Bishop and L. G. Kendall, Boston.—p. 37.
*Tribrom-Ethanol Narcosis in Treatment of Lung Edema Induced by Chemical Irritation. A. R. Koontz and C. H. Moulton, Edgewood, Md.—p. 47.
Carbazol Derivatives: I. Local Anesthetics of Uretbane Type. P. K. Knoefel.—p. 69.
Pressor Action of Yohimbine and Quebrachine. S. J. Weinberg, Baltimore.—p. 79.
Influence of Anesthesia on Cerebrospinal Fluid Pressure Response to Histamine and Epinephrine. S. J. Weinberg, Baltimore.—p. 95.
Effect of Sodium Isoamylthylbarbiturate (Sodium Amytal) on the Depressor Action of Brain Extract. R. H. Major, C. J. Weber and J. B. Nanninga, Kansas City, Kan.—p. 107.
Comparison of Bronchodilating Action of Several Antiasthmatic Agents After Anaphylactic and Histamine Shock in Guinea-Pig. O. W. Barlow and A. J. Beams, Cleveland.—p. 111.
Chemistry of Blood and Cerebrospinal Fluid, with Especial Reference to Calcium, in Cataleptoid State Induced by Bulbocapnine: Combined Effect of Bulbocapnine and Some Other Drugs. S. Katzenelbogen and M. C. Meehan, Baltimore.—p. 131.

Anesthetic Action of Divinyl Oxide in Man.—In studying the action of divinyl oxide on human beings, Gelfan and Bell first administered divinyl oxide, by the drop method, to one of the authors for a period of ten minutes. The subject was completely unconscious nine minutes after the beginning of the induction: partial analgesia was present after four minutes, complete analgesia after seven minutes and complete muscular relaxation in the arms and legs after ten minutes, at which time the anesthetic was discontinued. Two minutes after the removal of the mask, the subject had fully recovered. He immediately rose and walked about briskly with perfect coordination. The pulse remained normal throughout. Eight minutes after the removal of the mask, 150 cc. of water was ingested and retained. There was no nausea or vomiting at any time. About one hour later, food was taken with normal appetite and with no after-effects. About 20 cc. of the anesthetic was used during the ten minutes. During two subsequent trials there were no signs of excitement or struggling during the induction or during recovery. The authors emphasize the fact that the divinyl oxide was administered at a considerably slower rate than the usual rate of administration of diethyl ether in clinical cases and that, in spite of the rate of administration, the time required to induce anesthesia was considerably shorter than that required with diethyl ether. Divinyl oxide is not unpleasant to inhale. The induction with divinyl oxide is impressively smooth, prompt and even, and the recovery rapid. Deep and regular respiration may be noticed shortly after the beginning of the induction.

Anesthetic Action of Divinyl Oxide in Animals.—In experiments on mice and dogs with pure divinyl oxide, Leake and his associates observed that although it is inflammable and explosive like ether it has advantages over ether which recommend it as a general inhalation anesthetic agent for clinical evaluation. It is more volatile than ether and more powerful and rapid in its anesthetic action. It is less irritating, and its general physiologic actions are less severe. It has no significant pathologic effect when administered without anoxemia. Recovery is more prompt than from ether and apparently less attended with nausea or other evidence of physiologic distress. It may be administered by any technic used for ether. On the basis of the experimental evidence so far accumulated, divinyl oxide deserves clinical study to determine whether or not it has practical clinical advantages over the anesthetics now in common use. Divinyl oxide, on exposure to light and air, may polymerize or partially decompose with the appearance of formaldehyde and formic acid. Such material, of course, would be dangerous for anesthetic purposes.

Tribrom-Ethanol Narcosis in Treatment of Lung Edema.—Koontz and Moulton used various doses of calcium chloride and calcium lactate (given orally by stomach tube) in the treatment of edema of the lungs caused by gassing with phosgene, both in rabbits and in dogs. A considerable decrease in the edema was secured by this therapy, but no reduction in the death rate was effected. The use of tribrom-ethanol (100 mg. per kilogram of body weight) was then tried as a method of treatment in dogs. The narcosis produced kept the animals quiet for a number of hours after gassing. Occasionally the dose was repeated twenty-four hours later. The method effected a marked reduction in the amount of edema of the lungs and reduced the percentage of deaths by half.

Laryngoscope, St. Louis

43: 1-80 (Jan.) 1933

- Anatomy of Eighth Nerve: Central Projection of Nerve Endings of Internal Ear. R. Lorente de No, St. Louis.—p. 1.
*Free Iodine in Treatment of Vasomotor Rhinitis and Symptom Complex of Sneezing and Nasal Hydrorrhea: Preliminary Report. M. Levine, Brooklyn.—p. 39.
Red Septum. D. C. Jarvis, Barre, Vt.—p. 42.
*Nasal Mucous Membrane as Indicator of Faulty Body Chemistry: Pale Septum. I. Frank, Chicago.—p. 48.
Biophysics and Chemistry in Otorhinology. E. R. Lewis, Los Angeles.—p. 54.
Head Injuries and Ear Disturbances. A. J. Gueriot, Pittsburgh.—p. 61.
Spontaneous Rupture of Sigmoid Portion of Lateral Sinus. J. A. Flynn, Washington, D. C.—p. 65.

Free Iodine in Treatment of Vasomotor Rhinitis.—Levine reports favorable results in twenty cases of vasomotor rhinitis, in twenty cases of the early stage of common cold and in ten cases of hay fever from the use of subcutaneous injections of a 5 per cent solution of sodium iodide containing traces of free iodine. This treatment proves of value whenever the mucous membrane of the nose is waterlogged and appears to act by regulating the water output of the nose. Repeated injections are harmless except in laryngitis. He gave injections every two or three days until the symptoms subsided completely. As a rule, about six injections were required; in the more obstinate cases, as many as ten.

Pale Septum.—Frank states that in general practice there is no ready clinical method of discovering faulty acid-alkali balance in the body. The existing methods of finding excessive systemic acid or alkali are tedious and time consuming and require technical skill. It would be desirable to have a rapid, reliable clinical test, by which one could determine at a glance whether the nutritional state is faulty on the acid or alkaline side. Fortunately, such a sign seems to be available by inspection of the mucous membrane covering the cartilaginous nasal septum. The individual with excessive alkaline-ash residue, subject to colds, respiratory infections, hay fever and asthma, presents a nasal septum mucosa that is pallid and edematous. Consequently by the inspection of the nasal septum mucosa one may derive valuable information concerning the individual's acid-alkali balance. In every instance a careful history should be obtained concerning the patient's food habits, to confirm and substantiate the rhinologic examination. In individual persons in whom the symptoms are due to an excessive acid ash diet, alkaline-ash foods should be substituted and suitable

alkalis should be administered. For an individual whose alkaline-ash intake has been excessive, suitable dietary correction should be made. The author concludes that he has found these signs of value in diagnosis and an important guide in treatment.

Medical Annals of District of Columbia, Washington

2:1-22 (Jan.) 1933

- Splenic Ruptures. V. J. Dardinski, Washington.—p. 1.
Headache from Standpoint of Neurologist. A. Schneider, Washington.—p. 5.
Headache from Standpoint of Rhinologist. S. A. Alexander, Washington.—p. 7.
Value and Indications of Intravenous Injections in Pediatrics. R. A. Bier, Washington.—p. 9.

Medical Journal and Record, New York

137:45-88 (Jan. 18) 1933

- Treatment of Gonorrhea in the Male by American Urologists. A. L. Wolbarst, New York.—p. 45.
Hepaticocholangiostomy: Presentation of Case and Discussion. R. F. Elmer and C. E. Boylan, Chicago.—p. 48.
Menstrual Irregularities and Ductless Glands: Mechanism of Menstruation and Its Significance in Practical Therapy. C. A. Wright, Los Angeles.—p. 52.
Actinomyces Infections That Occurred at New York Hospital During Years 1916 to 1931: Report of Cases. M. Kerlan, Beverly Hills, Calif.—p. 54.
Growth Retardation Due to Untoward Confinement. I. Rod, Washington, D. C.—p. 57.

New York State Journal of Medicine, New York

33:65-130 (Jan. 15) 1933

- Relation of Exophthalmos to Nasal Sinus Disease. R. W. Hawkins, Rochester.—p. 65.
Exophthalmos: Its Ocular Symptoms. H. H. Joy, Syracuse.—p. 68.
Id.: Its Pathology and Ocular Manifestations. A. B. Reese, New York.—p. 73.
Id.: Its Surgical Treatment. W. W. Weeks, New York.—p. 78.
Clinical Picture of Unilateral Infarction of Medulla. E. L. Hunt and G. H. Grant, New York.—p. 83.
Artificial Light in Tuberculosis. G. G. Martin, Buffalo.—p. 85.
Superspecialization in Neuropsychiatry. I. J. Sands, Brooklyn.—p. 88.
*Therapeutic Use of Antipoliomyelitis Serum in Preparalytic Cases of Poliomyelitis. W. H. Park, New York.—p. 91.
Serum Treatment of Meningitis. Josephine B. Neal, New York.—p. 94.
*Use of Convalescent Serum in Treatment of Measles, Chickenpox, Mumps and Whooping Cough, Including Prophylactic Value of Parental Blood. J. M. Lewis and L. H. Barenberg, New York.—p. 97.

Antipoliomyelitis Serum in Poliomyelitis.—Park presents a study of the results of preparalytic poliomyelitis patients treated with convalescent serum. From his study he concludes that there was little or no statistical evidence of any difference between the serum treated and untreated patients with preparalytic poliomyelitis as observed by the pediatricians serving under the Poliomyelitis Committee of the Academy of Medicine and by those observing the cases in the hospitals for communicable diseases in the city. The slight difference in favor of the untreated patients may be attributable to the accidental inclusion of a somewhat larger number of graver infections in the treated patients. The results of the two controlled investigations indicate that, whenever possible, one should treat only a portion of the cases with serum and should make an equally careful observation of the cases not treated. In this way one may finally come to a conclusion whether the serum is of any value at a time when the spinal cord is already invaded by the virus of poliomyelitis. The author thinks that the treatment with convalescent serum cannot be given early enough to be of value as a preventive, just as in the case of children recently infected by the measles virus.

Serum in Measles, Chickenpox, Mumps and Whooping Cough.—Lewis and Barenberg point out that the high morbidity and mortality associated with measles in infants and young children, particularly those housed in institutions, urges the use of a procedure that will either prevent or modify this disease. To accomplish this end, Nicolle and Conseil in 1918 recommended the serum of patients convalescing from measles. The authors gave sixty-four children 6 cc. of convalescent measles serum obtained either ten days or thirty days after defervescence. Forty-four, or 73 per cent, remained completely protected. Of the sixteen children who developed the disease, fourteen came down with a markedly attenuated form of measles. The thirty-day serum appeared to be just as potent

as the ten-day serum. Of the thirteen infants exposed to chickenpox, five received 30 cc. of whole blood and eight received 40 cc. of serum from a professional donor. The infants who received 30 cc. of blood developed chickenpox in a mild form, but not one of the eight infants who received 40 cc. of serum came down with the disease. In the treatment of forty children who were exposed to mumps, they gave 12 cc. of blood (5 cc. of serum) obtained from patients convalescing from mumps. Six of the forty treated children developed mumps, an incidence of 15 per cent, whereas 49 of 125 control children developed the disease, an incidence of 39 per cent. In the whooping cough group the authors gave 30 cc. of normal adult blood to six children exposed to the disease, but all of the six children developed whooping cough of lesser severity than that of the control group. They conclude that, if one is desirous of preventing measles, chickenpox or mumps and convalescent serum cannot be obtained, the serum of adults who have had these diseases should be employed and complete protection may be expected in a large percentage of cases. Adult blood is also of value in modifying the course of whooping cough.

Public Health Reports, Washington, D. C.

48:63-87 (Jan. 20) 1933

- *Pellagra-Preventive Value of Autoclaved Dried Yeast, Canned Flaked Haddock and Canned Green Peas. G. A. Wheeler.—p. 67.

48:89-112 (Jan. 27) 1933

- Rat Infestation of Ships Out of Commission. C. L. Williams.—p. 89.

Pellagra-Preventive Value of Yeast, Haddock and Peas.—In his study on pellagra-preventive foods carried out in a state hospital, Wheeler tested dried bakers' yeast (autoclaved), canned flaked haddock and canned green garden or English peas for their pellagra-preventive potency. He observed that dried bakers' yeast is a good source of the pellagra-preventive factor, and its potency is retained after heating in the steam autoclave at 15 pounds pressure for seven and one-half hours. Canned flaked haddock contains the pellagra-preventive factor but in an amount so small that a relatively large proportion is required to supplement adequately an otherwise pellagra-producing diet. He describes some less commonly observed symptoms associated with the use of an intermediate allowance of the haddock and discusses their significance. Canned green peas supply the pellagra-preventive factor and may be found a highly practical and convenient source of this essential in the pellagrous sections during the spring months when pellagra-preventive supplements are not easily obtained.

Southwestern Medicine, Phoenix, Ariz.

17:1-42 (Jan.) 1933

- Highway Accidents and Their Care by Doctors and Hospitals. F. D. Vickers, Deming, N. M.—p. 1.
*Tissue Reactions to Tubercle Bacillus. J. W. Flinn, Prescott, Ariz., and Z. M. Flinn, Albuquerque, N. M.—p. 2.
Inflammatory Stricture of Ureter in Female. L. M. Miles, Albuquerque, N. M.—p. 4.
Urology in Infancy and Childhood. K. D. Lynch and R. F. Thompson, El Paso, Texas.—p. 11.
Granuloma Coccidioides: Primary Cutaneous Lesion, Treatment with Actual Caustery: Report of Case. S. W. Imerman and C. P. Imerman, Los Angeles.—p. 18.
Some Trends in Medical Economics. W. W. Watkins, Phoenix, Ariz.—p. 21.
Treatment of Vincent's Angina. B. H. Britton, El Paso, Texas.—p. 28.
Maternal and Child Hygiene in County Health Unit. Estella Ford Warner, Portland, Ore.—p. 28.

Tissue Reactions to Tubercle Bacillus.—According to the Flinns, tissue reactions to the tubercle bacillus are principally manifested in the activities of the monocyte, the lymphocyte and the neutrophil. The monocyte is the primary aggressor. It acts first as a phagocyte. Later it becomes converted into an epithelioid cell and forms the greatest part of a primary tubercle. In the healing process it plays a less conspicuous part but is associated with the lymphocyte and acts as a scavenger of inflammatory products. The lymphocyte is definitely associated with the healing process, but in exactly what way has not yet been demonstrated. The neutrophil plays the chief part in purely tuberculous suppuration. All these reactions are quite accurately reflected in differential counts of the circulating blood.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

14: 1-56 (Feb.) 1933

- Studies of Skin Reactions to Specific Soluble Substances of Pneumococcus Types I and II. J. M. Alston and A. S. R. Lowdon.—p. 1.
Heterotransfer of Two Filtrable Tumors: Investigation by Means of Resistance Induced by Embryo Tissue. W. J. Purdy.—p. 9.
*Serum Bilirubin: II. Relationship Between Bilirubin Content of Serum from Different Types of Jaundice and Icterus Index of Serum After Removal of Proteins. F. D. White.—p. 17.
Modern Tests of Liver Efficiency Applied to Experimental Shale Oil Liver Necrosis. C. Polson.—p. 24.
Parallel Action of Neutral Salts on Inhibition of Complement and Dispersion of Gelatin. J. Gordon and F. C. Thompson.—p. 33.
Optimal Proportions in Agglutination: Reference to Antigenic Analysis of Brucella Group of Organisms. A. A. Miles.—p. 43.

Serum Bilirubin.—White gives the name residual icterus index to the icterus index when determined on serum from which the proteins have been removed by precipitation with alcohol. He shows that, in serum artificially rendered icteric by the addition of bilirubin, the residual icterus index is directly proportional to the bilirubin content in milligrams per hundred cubic centimeters, the ratio being approximately 6 to 1. He has obtained results indicating that, within the limits of this investigation, this relationship also holds for the serum of normal persons and of patients with jaundice of hemolytic origin but does not hold for other types of jaundice. The icteric ratio of serum is defined as the ratio of the icterus index to the residual icterus index. In normal serum and icteric serum of hemolytic origin this icteric ratio has been found to be generally less than 1:2, whereas in all other jaundice cases investigated it was almost invariably much higher. The author suggests that, since this ratio is easily and quickly determined in cases of latent or slight jaundice, it might prove of assistance in differentiating such cases into "hemolytic" and "nonhemolytic" categories. A further differentiation of the latter category into "obstructive" and "toxic" types has not been found possible by this method. It is claimed that the generally accepted normal values for serum bilirubin are too low and that the normal range is at least from 0.5 to 1 mg. and possibly from 0.5 to 1.5 mg. per hundred cubic centimeters of serum.

British Journal of Ophthalmology, London

17: 65-128 (Feb.) 1933

- Superficial Punctate Keratitis. J. H. Doggart.—p. 65.
Scotomas in Migrainous Subjects. T. H. Butler.—p. 83.
Trachoma in Fiji: Original Investigation. R. Stuppel.—p. 88.
Aphakic Stereoscopic Vision, with Note on Synoptophore. J. Foster and Audrey S. Jackson.—p. 98.

British Medical Journal, London

1: 47-86 (Jan. 14) 1933

- *Use of Hydno carpates and Morrhuates Intradermally in Lupus Vulgaris: Observations. L. Rogers.—p. 47.
Inhibitory Action of "Alepol" on Growth of Tubercle Bacilli in Besredka's Fluid Egg Medium. S. L. Cummins and C. Weatherall.—p. 48.
Etiology of Hodgkin's Disease, with Especial Reference to Bacillus Tuberculosis-Avis. C. E. van Rooyen.—p. 50.
Atypical Hodgkin's Disease. E. G. B. Calvert and H. H. Sanguinetti.—p. 52.
Physiologic and Clinical Results of Division of Vas Deferens. A. C. Morson.—p. 54.
Rôle of Minerals and Vitamins in Growth and Resistance to Infection. A. Brown and F. F. Tisdall.—p. 55.
Value of Cesarean Section in Preeclamptic Toxemia. Margaret M. Basden.—p. 58.

Hydnocarpates and Morrhuates in Lupus Vulgaris.—Rogers states that his experience in treating extensive nodular lesions due to leprosy, by injecting hydno carpates directly into them, led him to try intradermal injections of ester morrhuates and hydno carpates in the treatment of a chronic case of lupus vulgaris. He commenced treating the thickened edge of a shoulder lesion by injecting a drop or two of ethyl ester morrhuate intradermally at several neighboring points at each sitting. This enabled him to test the effect of the injections in an unexposed part of the body. The results were beneficial. He soon extended the treatment to the thickened margins on the face and neck, with similar beneficial results. As progress with the morrhuates was slow, he used instead the more active ethyl ester hydno carpate in the form of "moogrol," combined

with a 4 per cent solution of creosote as an antiseptic. The administration of the hydno carpates was followed by the appearance of some fresh ulceration in the older, uninjected, central parts of the cheeks. This he regarded as a reaction in the diseased tissues similar to the swelling and softening of leprosy dermal lesions following intravenous or intramuscular injections of the same drug. He therefore returned to the morrhuates for a time. Subsequently he continued the treatment with the hydno carpates alone and found that the reactions in the central portions became milder and that an increasing number of points could be injected at a sitting, with more rapid improvement. At the end of a year the thickened diseased areas had nearly all disappeared, and the intervals between the injections were increased. The author has the patient under observation to determine whether the improvement will be permanent.

Edinburgh Medical Journal

40: 1-56 (Jan.) 1933

- Chronic Alcoholism and Its Treatment. D. K. Henderson.—p. 1.
Corrigan's Original Description of Aortic Regurgitation: Reference to Some Matters of Historical Interest. E. Bramwell.—p. 13.
The Need of a Course in Medical Genetics in Medical Curriculum: Pivotal Point in Eugenic Program. Madge Thurlow Macklin.—p. 20.
Outbreak of Infectious Jaundice: Report of Investigation. G. M. Elliott and C. P. Beattie.—p. 31.

Indian Medical Research Memoirs, Calcutta

No. 26: 1-144 (Jan.) 1933

- Investigation into the Value of Etherized Vaccine in Prophylactic Treatment of Rabies: Part VIII. Comparative Immunizing Value of Carbolyzed, Etherized-Carbolyzed and Etherized Vaccines Tested Under Ideal Conditions of Dosage and Administration. J. Cunningham, R. H. Malone and A. C. Craighead.—p. 1.

Lancet, London

1: 65-122 (Jan. 14) 1933

- Phlebitis. A. D. Wright.—p. 65.
*Masked Hyperthyroidism as Cause of Heart Disease. J. R. H. Towers.—p. 67.
Anemia of Carcinoma of Stomach. S. J. Hartfall.—p. 74.
Diabetes Mellitus and Insipidus: Associated in One Case. R. D. Lawrence and R. A. McCance.—p. 76.
Dermatitis Following Wearing of Dyed Fabrics. E. M. Killick and J. T. Ingram.—p. 77.
Progressive Postoperative Gangrene of Skin. F. H. Scotson.—p. 80.

Masked Hyperthyroidism as Cause of Heart Disease.—Towers presents an account of fifteen patients, all of whom may be described as cases of hyperthyroidism masked as heart disease. All were women. The average age was 52 years and the average duration of the symptoms was 3.8 years. The majority were apathetic in appearance, of good nutrition, and quite unlike the classic picture of exophthalmic goiter. The diagnosis was indicated by the suddenness of the apex beat, presence of extrasystoles with a rapid rate, presence of paroxysmal auricular fibrillation, the roentgen appearance of the heart, and increase in the pulse pressure. Thyroid enlargement was absent in ten patients, in two a slight fullness was noted only when the patient was made to swallow in the sitting posture, and in two a dense calcified nodule was present, though its significance had not been recognized. A slightly staring expression was noted in two cases, and pigmentation of the skin was seen in three. Some loss of weight occurred at some time in the majority of cases but was never marked. Estimation of the basal metabolic rate, if it is raised, is of great value as a means of confirming the diagnosis. In five patients there was pain in the chest of anginal nature and thyrotoxicosis occurred; in four the pain was felt at the onset of the attacks of palpitation, and as the latter were the result of thyroid toxicity, and appeared to precipitate the pain, such pain must be regarded as a symptom of this condition. The authors explain its frequency in their series on the grounds of the age incidence; i. e., an age at which atheroma of the coronary arteries is commonly present. The thyrotoxicosis must then be regarded as an etiologic factor of the pain only as it leads to an increased demand for work on the part of the heart, in the same way as does exertion or emotion. They report two cases in which high blood pressure was present but in which the symptoms were due to an associated thyrotoxicosis. In both patients, operation entirely relieved the symptoms but left the pressure unchanged. The failure of rest and digitalization to affect the condition is of diagnostic value. Iodine is often of value as a therapeutic test when it is first given. This effect,

though often striking, was always transitory, and later the drug had no effect. The patient appears to become refractory to it. The authors make a plea for the earlier recognition of these cases because of their comparative frequency, their difficulty of diagnosis and their amenability to treatment.

Medical Journal of Australia, Sydney

1: 137-170 (Feb. 4) 1933

- Some Problems in Diagnosis and Treatment of Genito-Urinary Tuberculosis. H. Moore.—p. 137.
Working Hypothesis of Roentgen-Ray Effect, with Especial Reference to Saturation Technic. E. W. Frecker.—p. 143.
Treatment of Adherent and Deficient Palates. W. J. Denehy and A. Amies.—p. 150.

Chinese Medical Journal, Shanghai

46: 1159-1254 (Dec.) 1932

- Early Signs of Toxemia of Pregnancy in Chinese Patients. A. Wong and A. Pillat.—p. 1159.
Treatment of Schistosomiasis Japonicum with Fouadin in Experimentally Infected Rabbits. C. U. Lee.—p. 1169.
Histologic Observations in Experimental Schistosomiasis Japonicum. R. Hoeppli.—p. 1179.
Note on Forces of Mortality and Their Classification in Peiping. J. B. Grant and I. C. Yuan.—p. 1187.
Foerster's Operation for Spastic Paralysis of Lower Extremities: Report of Case. S. T. Kwan and Y. L. Cheng.—p. 1190.
Tumor Clinic of Peiping Union Medical College. J. W. Spics.—p. 1198.
Simple Egg Medium for Cultivation of Bacillus Diphtheriae. S.-E. Pai.—p. 1203.

"Gann," Japanese Journal Cancer Research, Tokyo

26: 315-391 (Dec.) 1932

- Growth of Chicken Sarcoma in Body of Mosquito After Sarcoma Agent Has Been Sucked from Blood of Chicken by Mosquito. S. Macuoka and J. Jabuuci.—p. 315.
Primary Carcinoma with Seminoma Developing Simultaneously: Case. M. Sato.—p. 341.
Establishment of Cancer Laboratory and Hospital by Japanese Society of Cancer Research. M. Nagayo.—p. 362.

Japanese Journal of Obstetrics and Gynecology, Kyoto

15: 431-513 (Dec.) 1932

- Relation Between Action of Quinine to Rabbit Uterus in Situ and Suprarenal Capsule. H. Morimoto.—p. 432.
Relation Between Action of Morphine to Rabbit Uterus in Situ and Suprarenal Capsule. H. Morimoto.—p. 437.
Effect of Suffocation and Carbonic Acid Gas on Organs of Nonstriated Muscles. H. Morimoto.—p. 443.
Histologic Investigation of Digestive Tract of Human Fetus. D. Cho.—p. 457.
Morphologic Changes in Plaster Figures of Vaginal Cavity Before and After Operation for Uterine Retroflexion. J. Nakagawa.—p. 471.
Physicochemical Change of Blood in Gynecologic Diseases: Part III. Changes in Physicochemical Nature of Blood During Menstrual Period, Especially Observations in Patients of Hypoplasia Uteri. M. Ikeda.—p. 480.
Statistical Observations on Formation of Embolism and Thrombosis in Obstetrics and Gynecology. H. Matsuoaka.—p. 487.
Improvement of Tracheal Catheter for Obstetric Use. H. Fujimori.—p. 493.
Statistic Observation of Adolescent Primipara. K. Ueda.—p. 499.
Obstetric Research of Gigantic Children. J. Nakagawa.—p. 504.
*Newly Discovered Symptom for Diagnosis of Anencephalus. Y. Katsu.—p. 507.

Diagnosis of Anencephalus.—Katsu states that the uncertain symptoms in anencephalus are: (1) the palpability of spongy soft tissues which are surrounded by the projection of cranial bone; (2) the abnormal projection of the eyeballs; (3) the palpability of bony substance in the cerebral fundus, especially of the sella turcica and foramen magnum; (4) the abnormal smallness of the head in the fundus uteri in a breech presentation; (5) the rareness of ballottement of the head due to the abnormally short neck, and various symptoms such as a remarkable abdominal swelling, intense tension of the uterus, hydramnios, severe fetal movements, edema of hypodermic tissues, temporary albuminuria, anamnesis of syphilis, and faint fetal heart sounds as advocated by Lantaigne, Pinard, Giglio and others. The author diagnosed two cases of anencephalus during pregnancy by recognizing a slowing of the heart sounds of the fetus during vaginal exploration and ascertaining that they had no relation to labor pains and that they were due only to the pressure exerted by the exploring finger. In one case the number of the heart sounds decreased to 87 and when the pressure was discontinued the heart sounds gradually became normal. He found that there were differences in the degree of the symptom according to the parts of the brain pressed.

Presse Médicale, Paris

41: 329-344 (March 1) 1933

- Pancreatic Hormone in Arterial Hypertension. Abrami, Santenose and Bernal.—p. 329.
*Hepatic Sequelae After Operations on Gallbladder. R. Jahiel.—p. 331.

Hepatic Sequelae After Operation on Gallbladder.—Jahiel has observed that women who have been operated on for cholecystitis (often lithiasic) and whose extrahepatic bile ducts have been freed of all obstacles sometimes present repeated hepatic colics analogous to those observed before the intervention. In certain cases the recurrent hepatic phenomena seem to be influenced by the ovarian function. In one case the hepatic attack always occurred three or four days before the menstrual period but disappeared (with the exception of one mild attack) after sterilization with radium; in another case the hepatic disturbances disappeared at the menopause. In a third instance, however, the hepatic colics recurred only during the menopause. It seems that after cholecystectomy hepatic sensitivity to ovarian function may persist, no matter in what manner the latter varies. The author was also struck by the coexistence of manifestations of sensitivity closely linked with the hepatic attacks; in one case the attacks of hepatic colic occurred after attacks of asthma. In these cases the hepatic colics may be regarded as manifestations of a constitutional, organic sensitivity. In view of these facts the author suggests the hypothesis that a large part of the biliary syndromes and, above all, hepatic colics that one observes in the clinic are manifestations of the reaction of the liver to a dysfunction of the gallbladder in a person previously sensitized. In rare cases the person may remain sensitized to another cause and reproduce the syndrome after surgical intervention.

41: 345-368 (March 4) 1933

- Sclerodermas, Keloids and Calcemia. L.-M. Pautrier.—p. 345.
*Unrecognized Disturbances of Constrictors of Pharynx. H. Proby.—p. 348.
Sarcoma of Internal Meniscus of Knee. G. Pieri.—p. 348.
Roentgen Therapy of Inflammatory Diseases. A. Plichet.—p. 349.

Unrecognized Disturbances of Constrictors of Pharynx.—Proby reports a case of chorea of the constrictors of the pharynx. To his knowledge it is the only case reported in the medical literature. The explanation of this may lie in the abuse of the term paresthesia, which is used for all the pharyngeal disturbances whose precise pathology is not known. He has thought for a long time that these disturbances are based on a real lesion, such as microscopic abrasion of the pharyngeal mucosa or contraction of the muscles of the pharynx, which may be due to local infection or general infection. The pharyngeal muscles may be affected just like other muscles by toxins poured into the blood-stream from a local or general infection. It is known that chorea exhibits a predilection for the muscles subjected to a constant effort, in the upper and lower extremities and the face. It is difficult to find muscles subjected to more intensive work than those of the pharynx and it is easy to conceive that they may be affected on the same grounds as the other muscles by admitting that fatigue and decreased resistance favor the localization of infection in muscles in constant use. The author illustrates his theory with a case in which constriction of the pharynx appeared simultaneously with attacks of convulsive movements and unusual motor phenomena at the age of 15, six years after an attack of chorea. A nerve sedative caused the disappearance of the pharyngeal constriction as well as the motor disturbances in three weeks, and the therapeutic results were consolidated by administration of solution of potassium arsenite. Quarterly examinations have shown a permanent cure.

Revue Française de Pédiatrie, Paris

8: 649-784, 1932

- Allergy to Ovalbumin in Nursing. P. Wöringer.—p. 649.
Scarlet Fever and Rheumatism. V. Moltschanow.—p. 675.
Blood Transfusion in Severe Bronchopneumonia in Early Infancy. G. Phélizot and B. Tassovatz.—p. 695.
*Injection of Maternal Blood in Severe Vomiting of Nursing. H. Audoud.—p. 737.
Case of Erythremia Successfully Treated with Raw Onions. L. Boissonnas.—p. 745.
Myxosarcoma of Bladder in Infant. A. G. Weiss and R. Meyer.—p. 748.

Injection of Maternal Blood in Vomiting of Nursing.—Prompted by the favorable results obtained by Robert with injections of maternal blood in cases of severe vomiting in

nurslings, Audéoud tried this treatment in eight cases. The age of the nurslings varied from 5 weeks to 3 months. All presented repeated, abundant, projectile vomiting, had lost considerable weight, and were weak and in poor general condition. Injections of 20 cc. of the maternal, or sometimes paternal, blood were made every two or three days, 10 cc. being injected into each buttock. The treatment lasted from three to nine weeks. The initial constipation was gradually replaced by normal bowel movements, and the vomiting was gradually cured; the infants regained the appearance of good health and were able to take normal meals. The increase in weight varied from 650 Gm. in twenty-two days to 1,515 Gm. in seven and one-half weeks, the average gain being 1,029 Gm. Dietetic therapy should be concurrent with the hemotherapy. At first only carbonated water was given in teaspoonfuls; later it was mixed with sweetened condensed milk. The amounts were gradually increased as the vomiting decreased. Massage with warm camphor liniment and warm compresses on the region of the stomach every two or three hours aid in calming the violent contractions of the stomach. The mode of action of the injections is not known. Robert thinks it may act as in anaphylactic diseases. The treatment is a simple one that can be used by the general practitioner and may avoid a surgical intervention.

Archiv für klinische Chirurgie, Berlin

174: 209-400 (Feb. 18) 1933

- Use of Thorotrast. K. Ebbardt.—p. 209.
Experimental Studies on Blood Changes, Result of Aseptic Thrombus Formation. S. Kojima.—p. 216.
Pathogenesis and Symptoms of Hepatodiaphragmatic Interposition. N. A. Podkaminsky.—p. 242.
Late Results of Injuries to Heart Muscle and Coronary Vessel. G. Gronwald.—p. 249.
Clinical Investigation of Splenic Function. M. Kuru.—p. 281.
Secondary Ovarian Carcinoma Demonstrated in Case of Primary Carcinoma of Esophagus. H. Offergeld.—p. 324.
Large Neurinoma of Seventh Cervical Nerve with Especial Attention to Bone Changes. V. Jura.—p. 341.
Serum Therapy of Appendicular Peritonitis. F. Prochnow.—p. 349.
Bronchiectasis Result of Gunshot Wound of Lung. E. Sereghy.—p. 360.
Histopathologic Study of Malignant Tumors of Mouth. J. Hofhauser.—p. 371.
Diagnostic and Therapeutic Value of Diastase Determination. G. Garry.—p. 378.
Ewing Sarcoma with Spontaneous Fracture Symptom Free for One and One-Half Years Treated by Roentgen Irradiation Solely. A. Zupfinger.—p. 397.

Splenic Function.—Kuru studied the effects of the removal of the spleen in twenty patients. The cases investigated fall into four groups: 1. Cases characterized by increased destruction of erythrocytes in the spleen with resulting icterus. 2. Cases characterized by intrasplenic destruction of thrombocytes and resulting in a hemorrhagic diathesis known as essential thrombopenia. 3. Cases characterized by massive primary splenic enlargement associated with the so-called Banti symptom complex. In this group, in addition to the involvement of erythrocytes and thrombocytes, the leukocytes suffer as well. They are reduced in number and in their capacity to react to certain stimuli, such as injections of epinephrine. 4. Cases in which the spleen was removed for purely accidental causes, such as subcutaneous rupture of the spleen or its involvement in a gastric malignant tumor. The author concludes that a number of blood changes following splenectomy and ordinarily ascribed to the loss of splenic function should in reality be referred to the disturbance in the correlation of the hematopoietic activity. His experiments, however, clearly demonstrate that the splenic function of blood destruction may prove to be the most important feature in certain conditions. The author demonstrated it by finding an increased bilirubin content of the blood from the splenic vein, by the reduction of the cholesterol content of the erythrocytes and by the lowering of resistance of the red cells. Certain changes occur as the result of the operation itself and must not be confused with changes due to the loss of splenic function. These are increases of erythrocytes and leukocytes, and shortening of the bleeding time and of the coagulation time observed directly after the operation, as well as changes in the blood albumin and blood viscosity and in the sedimentation time of the erythrocytes. Loss of the spleen gave rise to the following changes: (1) increase of blood platelets and erythrocytes, lymphocytosis, monocytosis and increase of the cholesterol content of the

plasma; (2) increase of the resistance power of the erythrocytes, appearance of the Howell-Jolly bodies and increase of the cholesterol content of red blood cells.

Beiträge zur klinischen Chirurgie, Berlin

157: 113-224 (Feb. 18) 1933

- Resection of Basal Phalanx for Hallux Valgus. M. Kaspar.—p. 113.
Problem of Pseudarthrosis and Its Relation to Bone Regeneration. W. Schilling.—p. 121.
D'Hérèlle's Phenomenon with Staphylococcus Pyogenes-Aureus. M. Shimizu.—p. 154.
Sagittal Presentation of Lower Cervical and Upper Thoracic Vertebrae in Roentgenogram. T. Bársony and E. Koppenstein.—p. 166.
Treatment of Carcinoma of the Rectum in Göttingen Clinic from 1912 to 1931. E. R. Heydemann.—p. 173.
Place of Sympathectomy in Surgery. W. Rieder.—p. 193.
Preoperative Treatment of Exophthalmic Goiter. W. Nell.—p. 212.

Treatment of Carcinoma of Rectum.—Heydemann presents a clinical statistical study of carcinoma of the rectum treated in the Göttingen clinic during the period from 1912 to 1931. Of the 346 cases treated, 218 were in men (63 per cent) and 128 in women (37 per cent); 164, or 47.4 per cent of the patients, were submitted to the radical operation; 52.6 per cent came to the clinic in an inoperable state; 18.7 per cent died while in the hospital. Of these, 23.7 per cent died after the radical operation and 13.7 per cent without the radical operation. The importance of early and radical removal of rectal polyps is suggested by the fact that, in twenty-seven patients, carcinoma developed in a polyp. As the result of comparison of the various methods used in the clinic the author draws the following conclusions: The radical operation is the only method to be considered in the treatment of operable cases. The combined operation gives the best results. This should be preceded by an exploratory laparotomy in order to establish the question of operability. Preservation of the anal sphincter is possible only in high localization and even then in a small proportion of the cases. The primary operative mortality can be lowered by the adoption of the two-step method: (1) formation of an artificial abdominal anus and (2) abdominal or, preferably, the combined abdominosacral extirpation of the rectum with extraperitoneal closure of the rectal stump. Roentgen or radium irradiation is suggested in all cases in which a doubt as to complete removal exists. An improvement lasting for years can be brought about in the inoperable cases by formation of an artificial anus, by irradiation and by repeated electrocoagulation. Irradiation as the sole treatment for operable cases is not admissible. Finally, the intractable pains of an inoperable carcinoma can be relieved by chordotomy.

Future of Sympathectomy.—Rieder, in his discussion of sympathectomy, points out the established anatomic facts with regard to the sympathetic nerve paths. The sympathetic nervous system serves as the connecting link between the spinal cord and the vegetative organs. The connection is accomplished by means of the rami communicantes albi. From the sympathetic trunk, by means of the rami communicantes grisei, sympathetic nerve fibers pass to all the internal organs, the peripheral blood vessels, the erector muscles of hairs and the sweat glands. In addition to the sympathetic nerve fibers with a segmental distribution, the blood vessels possess autonomous nerve plexuses. The author points out that, in spite of numerous favorable reports, periarterial sympathectomy has been on the whole disappointing in vasomotor disturbances, Raynaud's disease, traumatic edema (Leriche) and acute osteoporosis. The limitations are to be seen in the fact that the operation, while removing the autonomous nerve plexuses, leaves the segmental nerve fibers intact. In the author's experience, ramisection is much more effective. This operation, first performed in man by Royle, severs all the vasoconstrictor fibers and accomplishes as much as ganglionectomy. To interrupt vasoconstrictor impulses to the hand it is necessary to section the gray branches running from the fourth cervical to the second or third thoracic ganglion. For the foot this is accomplished by sectioning the rami communicantes grisei from the third lumbar to the second sacral ganglion. It was observed at times that ramisection on one side benefited the condition on the opposite side. Since all organs have a double innervation, sympathetic and autonomic, it is evident that a nerve supply will still remain after a sympathectomy. The study of the literature with regard to the results obtained by rami-

sectomy in bronchial asthma and in angina pectoris shows that they were disappointing. On the basis of his own experience with seven cases of endangiitis obliterans in which he operated, the author believes that the presence of the spastic component in the symptom complex constitutes the most favorable indication for sympathectomy. Cases characterized by attacks resembling Raynaud's disease gave the best results. Favorable results from ramisectomy could be predicted with a considerable degree of certainty if the limb developed hyperemia and hyperthermia after anesthetization of the peripheral nerves supplying it. Lack of response is a contraindication to operation. The author maintains that by the adoption of this test one may expect ramisectomy to relieve the unbearable pains of endangiitis obliterans, improve the condition, prevent the threatening gangrene and obviate an amputation. Of the seven patients operated on by the author, five were permanently relieved when examined five years, three and one-half years and three years later. Of eight cases of Raynaud's disease which did not respond to conservative treatment and in which a ramisectomy and ganglionectomy were done, four were cured, two improved, and in two the symptoms returned. Postmortem on one of the failures revealed that the inferior cervical ganglion, the first thoracic ganglion and a portion of the cervical sympathetic trunk were removed. In addition, a periarterial sympathectomy of the subclavian artery was performed. The two cases resulting in failure demonstrate the importance of the autonomy of the peripheral plexuses.

Exophthalmic Goiter.—According to Nell, lack of unanimity in the treatment of exophthalmic goiter is caused by the variability in the clinical course of the disease. Severe acute exacerbations in mild cases are no less unusual than long remissions in full blown cases. He deplors the indiscriminate administration of iodine and states that practically every patient applying to the Göttingen clinic because of an enlarged thyroid gland had had iodine. The aim of the treatment is to reduce the thyroid function, and that is best accomplished by a subtotal thyroidectomy. The dominant features in the preoperative treatment are: (1) absolute rest, (2) rest combined with medicaments, roentgen treatment and minor preoperative surgical procedures such as ligation of vessels, and (3) iodine treatment after the method of Plummer and Boothby. The author considers the iodine treatment by far the most important single measure in the preoperative management of these patients. Administration of iodine converts a hyperplastic goiter into a colloid goiter. The histologic changes are closely paralleled by improvement in clinical symptoms. Psychic manifestations abate, the weight increases, the pulse is slowed and the basal metabolic rate is lowered. Exophthalmos and struma are likewise affected. The experience of the war and postwar periods demonstrated that a spare diet, poor in albumin and fat content, diminished the incidence of thyrotoxicosis and exerted a beneficial effect in cases of thyrotoxicosis. A lactovegetarian diet consisting of small but frequent meals was found to be most effective in raising the weight and improving the general condition of the patients. In view of the lack of knowledge as to the interrelation between the thymus and the thyroid, irradiation of the former as a preoperative measure in the severer forms of the disease has not been accepted by most surgeons. Roentgen irradiation as a preoperative measure is almost universally objected to. There is no certainty as to the time necessary to accomplish the desired result, and many cases are refractory to irradiation. Occasionally the treatment is followed by necrosis and by hypothyroidism. Sauerbruch is of the opinion that the general health in the refractory cases is impaired by it. That the treatment is not absolutely safe is attested by the occasional reports of deaths at the end of or during a course of treatment with roentgen radiation. Fibrillating and arrhythmic hearts yield to treatment with quinidine, but digitalis alone was found to be ineffective. The optimal time for operation is between the seventh and the eleventh day: the basal metabolic rate is not an absolute indication as to the best time to operate. Close observation by an experienced surgeon is necessary in conjunction with readings of the basal metabolic rate. One should not wait too long and one should not operate if the metabolism is rising. Tribrom-ethanol is the principal anesthetic employed in the Göttingen clinic. The author considers its introduction a great advance in the surgical treatment of thyrotoxicosis.

Deutsches Archiv für klinische Medizin, Berlin

174: 581-676 (Feb. 9) 1933

- Studies on Colloid Osmotic, Oncotic Pressure: Nephrosis With Low Colloid Osmotic Pressure and Without Edema. E. Kylin.—p. 581.
- *Electrocardiographic Observations in Typhoid and in Pneumonia. P. Lukomski.—p. 587.
- To What Extent Does Human Skin Have Capacity to Absorb Water? A. Schwenkenbecher.—p. 596.
- Lobar Pneumonia: Clinical Course and Pneumococcus Type. I. Oettinger, I. Masel and L. Wiktorow.—p. 602.
- Id.: Type Specific Reaction of Urine. I. Oettinger, I. Masel and L. Wiktorow.—p. 615.
- Id.: Significance of Bacillus Carriers for Type I and Type II Pneumonia. I. Oettinger and L. Wiktorow.—p. 620.
- Cystoscopy. R. Mayer-List.—p. 629.
- Genetic Relations Between Microliths and Gallstones, Especially Pigment Calcium Stones. G. Lemmel and W. Büttner.—p. 641.
- *Active Pulmonary Edema. L. Hess.—p. 649.
- *Atypical Hypoglycemic Manifestations in Severe Diabetes. E. Haintz and E. Kolta.—p. 667.

Electrocardiographic Observations in Typhoid and Pneumonia.—Lukomski studied the electrocardiograms of sixty patients with typhoid and of forty patients with pneumonia. In 68 per cent of the patients with typhoid he observed tachycardia. Bradycardia was noted in only 16.6 per cent of the cases, and it usually set in after the fever had decreased. During the fever period these patients, as a rule, showed a divergence between pulse acceleration and temperature increase. The author thinks that intoxication of the central nervous system by the virus of typhoid is the main cause of tachycardia and bradycardia. Disturbances in the cardiac conduction system are slight and rare and disappear again comparatively early. They appear in the electrocardiogram only as a prolongation of the PR interval. Extrasystole was observed in a few typhoid patients and fibrillation arrhythmia was never observed. The negative T deflection with corresponding changes in the ST interval was observed comparatively often in typhoid. The changes in the T deflection and in the ST interval are the main indicators of myocardial changes in typhoid. In the pathogenesis of cardiovascular insufficiency of typhoid, an essential part is played also by the decrease of the vascular tonus, which becomes manifest in a considerable decrease of the blood pressure (especially of the minimal pressure), in the development of the rapid pulse and in diastolic. The author thinks that these manifestations are related to the intoxication of the central nervous system. In pneumonia, the electrocardiographic signs of myocardial disturbances are extremely slight. They are limited to an occasional extrasystole, fibrillation arrhythmia and negative P and T deflections. The decrease in the tonus of the peripheral circulation represents an important factor in circulatory insufficiencies of the acute pneumonias as well as in typhoid.

Active Pulmonary Edema.—Hess reviews the mechanical factors of pulmonary edema and points out that it is probable that nervous processes also play a part. He discusses two factors connected with the latter problem: (1) the nutritional reflex of the active lung and (2) the changes in the circulation during acute increase in pressure. The thought that the increased activity of the lung leads to active congestion and thus produces the condition for increased transudation induced the author to investigate the behavior of the lungs in cases in which, because of anatomic conditions, there is an increased activity of one lung. He discusses and illustrates with case reports the pulmonary function in the following conditions: the constriction of one lung by pleuritic adhesions, the exclusion of large portions of the lung by pneumonia and the obstruction of large bronchial branches by tumors. He describes the changes in the circulation during acute increase in pressure and reviews a case history showing that congestive pulmonary edema was not produced by insufficiency of the heart but rather by a considerable increase in blood pressure, which in turn was the result of tumors of the suprarenals. The author thinks that in these two types of cases the increased circulation of the lung is the result of nervous impulses and that it may lead to increased transudation and to profuse expectoration. Small amounts of fluids from the capillaries and the venules enter into the alveolar spaces of the lung even under physiologic conditions and are eliminated during expiration. If, however, under pathologic conditions the quantity of transudated fluid increases, it can no longer be completely eliminated, and it gradually fills the air cells and bronchioles. As this obstruction of the air passages advances, the dyspnea

becomes more severe and the activity of the unimpaired parts of the lung and their blood perfusion increases.

Atypical Hypoglycemia.—Haintz and Kolta relate the clinical histories of four patients with severe diabetes. All had high blood sugar values in the morning and a persistent glycosuria. The unusual aspects of these cases were attacks in which the nervous symptoms predominated and the hypoglycemic origin of which was proved not only by the low blood sugar values during the attacks but also by the prompt action of the administered carbohydrates. The authors conclude that in manifestations indicating disturbances of the central nervous system, in patients who require large amounts of insulin, hypoglycemia should be thought of, even if a blood sugar test several hours before revealed high blood sugar values.

Deutsche medizinische Wochenschrift, Berlin

59: 279-316 (Feb. 24) 1933

- *Multiple Sclerosis and Hereditary Factor. F. Curtius.—p. 279.
- Extraction of Senile Cataract in Capsule. W. Stock.—p. 281.
- *Clinical Value of Carcinoma Reaction According to Lederer. Zwerg and H. J. Lauber.—p. 283.
- Treatment of Chronic, Functional Constipation with Methods of Yoga Practice. E. Wittkower and K. Dhawan.—p. 284.
- *Galactose in Dietary Treatment of Diabetes. J. Freund.—p. 285.
- Sodium Salt of Barbituric Acid Derivative for Painless Delivery and in Gynecologic Interventions. M. Samuel.—p. 286.
- Temperature Measurements with Thermo-Element in Short Wave field. O. Brinck and J. Kiliereich.—p. 288.
- Experimental Syphilis in Parabiologic Rabbits. W. Krantz.—p. 289.

Multiple Sclerosis and Hereditary Factor.—Curtius shows that the etiologic pathogenic theories about multiple sclerosis have changed repeatedly and that the one-sided consideration of laboratory investigations led to a neglect of the hereditary factor. Moreover, in those cases in which heredity was considered, it was, as a rule, rather superficially investigated. The author examined 3,127 relatives of 56 families of patients with multiple sclerosis. As a proof that former hereditary investigations had been inadequate, he cites the fact that, of 749 persons in whom he discovered neurologic or psychiatric abnormalities, only 3 per cent had been found defective in former studies. He cites the following observations as the most important that were made in the course of these studies: 1. Nervous and mental diseases were 1.64 times as frequent in the families with multiple sclerosis as in the average population. 2. The incidence of neuropsychopathic disturbances in families with multiple sclerosis decreases parallel with the degree of relationship; that is, the incidence is highest in families with the closest blood relationship and lowest in those in which the relationship is most distant. 3. The higher incidence in families with multiple sclerosis is largely the result of purely hereditary factors, being in the proportion of 12:3 of the average population, whereas diseases that are primarily produced by environmental factors have approximately the same incidence in the two groups. These observations permit the conclusion that an unfavorable hereditary constitution of the central nervous system plays an important part in the pathogenesis of multiple sclerosis. The author gives a tabular report showing the predominance of a number of neuropsychopathic conditions in families with multiple sclerosis compared to the average population and shows that the "microheredodegenerations" play an important part in families with multiple sclerosis. He mentions hereditary tremor, hereditary labyrinthine barycoia, hereditary abducens paresis, hereditary alexia, hereditary nystagmus and hereditary anomalies of the tendon reflexes. However, the central nervous system is not involved alone. Other quite frequent familial disorders are spastic constipation, allergic diathesis and hypogenitalism. As far as the body structure of patients with multiple sclerosis is concerned, the leptosomic type predominates.

Clinical Value of Lederer's Carcinoma Reaction.—The simplicity of Lederer's carcinoma reaction induced Zwerg and Lauber to test its reliability in forty-four cases. The diagnosis of carcinoma had been established by surgical treatment and by histologic examination of thirty-three, carcinoma was absent in nine and the diagnosis was doubtful in two. A detailed description of the technic of Lederer's reaction is not given, but the authors point out that it is based on the protective action of the blood against suspension colloids, which in carcinoma is supposedly reduced. On the basis of their observations they reject the method as unreliable.

Galactose in Dietary Treatment of Diabetes.—Freund studied the tolerance of diabetic patients for various carbohydrates. In a comparison of the tolerance for galactose and levulose with that for dextrose, the tolerance for levulose was found to rate highest. The author thinks that, to a certain extent, levulose as well as galactose can be used for sweetening the food of the diabetic patient, but he points out that studies by another investigator have proved that the polysaccharide of levulose, inulin, is even better tolerated.

Deutsche Zeitschrift für Chirurgie, Berlin

239: 241-368 (Feb. 19) 1933

- *Diagnosis of Drunkenness in Accidents by Means of Determination of Amount of Alcohol in Blood. R. Goldhahn.—p. 241.
- Latent Toxic Damage and Its Role in Operative Trauma. H. J. von Brandis.—p. 262.
- *Results of Treatment in Exophthalmic Goiter. W. Ewald.—p. 275.
- Results in Treatment of Fractures of Thigh. K. Brandt.—p. 294.
- Late Results of Resection in Linear Degeneration of the Patella. K. H. Erb.—p. 332.
- Method of Autohemotherapy. F. Schürer-Waldheim.—p. 352.
- Experimental Studies of Removal of Foreign Blood After Loading of Reticulo-Endothelial System with Thorium Dioxide and Thereby Injuring the Organism. H. Hanke.—p. 363.

Diagnosis of Drunkenness.—Goldhahn points out the desirability of an objective method of determining the state of drunkenness or sobriety in traffic accidents. The author recommends the adoption of Widmark's micromethod of determination by means of which it is possible to estimate the exact amount of alcohol imbibed as well as its effect on the general state of the person. Accurate determination of the total amount of imbibed alcohol is possible within limits of error amounting to 10 per cent. A concentration of 2 per cent or higher is to be regarded as capable of producing decided alcoholic effect. Acetonemia is mentioned as a possible source of error. The blood alcohol, however, in this condition does not exceed a concentration of 0.3 per cent. The author suggests that with the legalization of the test both the driver and the injured be submitted to the test.

Exophthalmic Goiter.—Ewald states that in his material the severity of the disease could not be gaged by the basal metabolic rate, the lymphocytosis, or the histologic picture of the thyroid gland. The general clinical picture was a safer guide. He is of the opinion that thymic involvement as well as the reaction to iodine vary in goitrous and in nongoitrous localities. Iodine was taken by 31 per cent of the patients with thyrotoxicosis because of enlargement of the thyroid gland. Of the 147 patients with exophthalmic goiter treated in the Bonn clinic between 1920 and 1930, 89 per cent were women and 11 per cent were men. Of the 126 patients operated on, 16 died, giving a mortality of 12.8 per cent. Since the introduction of Plummer's method of preoperative iodine administration into the clinic in 1928, the mortality was reduced to 9.1 per cent. Heart failure was the principal cause of mortality. The author suggests that sudden deprivation of the thyroid secretion rather than the flooding of the organism with the secretion, as formerly believed, may be the cause of death. The results with the preoperative administration of iodine were gratifying. The most constant effect was seen in lowering the pulse. The basal metabolic rate was lowered from 30 to 35 per cent, the weight increased and nervousness subsided. The effect of quinidine and digitalis on the pulse frequency was not as striking as that of iodine. The experiences with roentgen irradiation, both as a preoperative and as a curative measure, were unsatisfactory. There was one fatality thirteen days after the last roentgen exposure and another after the first treatment. The author shares Rieder's view that roentgen irradiation is liable to be particularly dangerous in the severe cases. The results after operation are considered excellent. There was noted in all cases a rapid improvement of all the symptoms. The pulse fell to from 74 to 80, the patients gained in weight and in strength, the basal metabolic rate fell to 10 or lower. Of the patients operated on, 82 per cent were able to follow their original occupations. There were only two recurrences, and they were cured by a secondary operation. Subtotal bilateral resection in one stage proved to be the operation of choice. This, in exceptionally severe cases, was preceded by ligation of two or of all four arteries. The author suggests that the operative mortality will be materially lowered when patients with exophthalmic goiter are operated on before irreparable damage to the organism has taken place.

Klinische Wochenschrift, Berlin

12: 249-288 (Feb. 18) 1933. Partial Index

- Elimination of Antigen Substances in Urine During Infectious Diseases, Particularly in Tuberculosis and Syphilis. F. Klopstock.—p. 249.
- *Coma Resulting from Insulin Deficiency and Coma Refractory to Insulin in Course of Diabetes Mellitus. S. J. Thannhauser and H. Fuld.—p. 252.
- Relations of Hypersusceptibility and Immunity in Experimental Streptococcal Infections. R. Böhmig.—p. 258.
- Correlations of Linear Heart Size and of Heart Volume. A. Kahlstorf.—p. 262.
- Influence of Mono-Iodo-Acetic Acid on Bacterial Lactic Acid Formation. K. Meyer.—p. 265.
- Immobilization of Lung in Collapse Therapy. E. Brieger.—p. 266.
- *Therapy of Melaena Neonatorum: Time Required for Intestinal Passage in the New-Born. W. Bayer.—p. 269.
- Pseudopneumonia Infantum. M. A. Goldzieher and M. B. Gordon.—p. 270.
- *Cultural Demonstration of Tubercle Bacilli in Serous Body Fluids by Means of Fluid Mediums. A. Axen.—p. 273.

Coma Refractory to Insulin.—Thannhauser and Fuld relate the clinical history of a woman, aged 65. She had diabetes mellitus and for a number of years she reacted favorably to insulin. Then, for some unexplained reason, she became insulin resistant within the short period of twelve days. She required increasingly larger amounts of insulin until from 300 to 450 units did not decrease the blood sugar to low values, and did not noticeably influence the elimination of sugar. The acetonemia and acetonuria reached enormous values. In the beginning of the insulin refractory stage the patient was still conscious and the circulation was unimpaired, but visual disturbances set in. The comatose circulatory weakness did not develop until eight hours after the completely developed coma. The authors point out that the cases of insulin resistance which have been reported in the literature can be classified into three groups. The first group includes conditions in which sugar is eliminated while the blood sugar content is normal or subnormal, and large amounts of insulin are necessary to overcome the glycosuria. The second group includes cases with increased blood sugar, which for a certain time require large amounts of insulin to become sugar free and in the sugar-free stage tolerate large amounts of insulin. The authors think that in these cases insular and extra-insular factors are involved. The third group includes cases in which high blood sugar, acetonemia and acetonuria exist and in which enormous amounts of insulin are necessary to eliminate the ketone bodies. In these patients there usually exists an intercurrent febrile disease or an abscess. After cessation of the fever or the suppuration, the insulin requirements are once more normal. The case reported belongs to none of these groups but represents a fourth type of insulin resistance, which the authors designate as "insulin refractory." They review Thannhauser's theory of insulin action and conclude that in the reported case there existed at first a true insular diabetes with insulin deficiency. In addition to this disturbance a second one developed, the nature of which is unknown but which withdrew the fermentative substrate of the liver cell from the insulin action, blocked it completely and perhaps destroyed it. It is evident that, if the point of attack is lacking, the largest amounts of insulin are ineffective. As a rule diabetic coma is the result of pancreatic insufficiency, and administration of insulin usually counteracts it. In rare instances, as in the reported case, a refractory diabetic coma may develop because the point of attack of the insulin is blocked or entirely destroyed. The coma resulting from insulin deficiency and the insulin refractory coma show the same clinical aspects; that is, complete failure of the intermediate metabolism and resulting intoxication. However, the mechanism of pathogenesis differs greatly in the two conditions.

Melaena Neonatorum.—Bayer doubts the possibility of an early diagnosis of melena and he thinks that in most cases the diagnosis is made when the hemorrhage has already ceased and when the therapy would naturally be too late. In order to know more about this problem, it is essential to know the time required for intestinal passage in the new-born. Because the literature gives little information about this, the author studied the time required for intestinal passage in 132 new-born infants. His studies indicate that the intestinal action is extraordinarily slow during the first twenty-four hours and that the action becomes more rapid only on the second or third day. Experiments in which the twenty-four hour fasting period was interrupted and food was given within the first ten hours

proved that this is a physiologic regularity and not merely the result of fasting. This observation is significant for melena because the diagnosis based on the elimination of blood comes as a rule too late; that is, at a time when treatment is no longer necessary because the hemorrhage has already ceased. The author thinks that this explains the reports about the favorable effects of intramuscular injection of serum or blood. These measures seem to be effective because they are used at a time when the crisis has already passed. In cases in which the persistence of the hemorrhage is manifest (hematemesis or rectal elimination of blood), it can be seen that only intravenous administration of blood is effective.

Demonstration of Tubercle Bacilli by Means of Fluid Mediums.—The culture medium employed by Axen was a 1 per cent dextrose bouillon. He states that, when cerebrospinal fluids or pleural exudates were examined in his laboratory, banal pus-producing organisms were always searched for. When the observation of such cultures was continued only for the few days sufficient for the detection of such organisms, it was observed that the dextrose bouillon remained clear even if animal experiments or culture on Petraghani mediums revealed that it contained tubercle bacilli. An accidental observation induced the author to keep the inoculated bouillon for a longer period, and he found that in a considerable number of cases a finely granulated, sandlike sediment developed between the twentieth and thirtieth days. This sediment then grew rapidly, so that on the fortieth day gray, yellowish granules of about pinhead size were noticeable, which proved to be pure cultures of tubercle bacilli. After that, the sediment as well as the size of the granules increased, but the medium never became turbid, nor was there a surface growth of tubercle bacilli. Consequently this is a true deep growth of the tubercle bacillus. The author compared the results of the deep culture with those of the culture on the Petraghani medium and of the animal experiment. In some instances he found the deep culture in the dextrose bouillon superior to either or to both of the other methods. He admits that in view of his limited material a final evaluation of the method is not yet justified and that additional studies will be needed, but he considers it a valuable addition to existing diagnostic methods, particularly because its simplicity makes it acceptable in small laboratories.

Medizinische Klinik, Berlin

29: 279-310 (Feb. 24) 1933. Partial Index

- *Surgery of Biliary System. E. Melchior.—p. 279.
- Free Diet in Diabetes. K. Stolte.—p. 288.
- Idem. C. von Nopden.—p. 289.
- *Experiences with Whooping Cough Vaccine. R. Ungar.—p. 290.
- Albumin from Descending Urinary Passages. A. Legahn.—p. 293.
- *When are Tubercle Bacilli Found in Blood and What Significance Has It for Organism? B. Busson.—p. 294.

Surgery of Biliary System.—Melchior's report shows that in true cholelithiasis he favors surgical intervention, because without it the prospects for permanent improvement are slight. As another argument for surgical intervention he cites the fact that many patients with cholelithiasis die of its complications. He discusses and illustrates with case histories such conditions as irreparable lesions of the liver, carcinoma of the liver, liver abscesses, acute pancreatitis, perforation of the gallbladder and cholemia. He explains the bacteriologic behavior of acute infectious cholecystitis and discusses the clinical diagnosis of uncomplicated cholelithiasis. He considers dropsy of the entire biliary system a particularly interesting chapter in the surgery of the biliary tract. He describes his observations on totally obstructing calculus of the choledochus and on putrid cholangitis and discusses the post-operative complications.

Experiences with Whooping Cough Vaccine.—Contradictory reports about the efficacy of whooping cough vaccine induced Ungar to report his own observations in the course of a whooping cough epidemic in a children's home, and in eighteen cases in his private practice. Two types of vaccine were used, one containing only killed Bordet-Gengou bacilli and another one containing, besides the Bordet-Gengou bacilli, also Bacillus influenzae, Staphylococcus aureus, S. albus, Pneumococcus and Micrococcus catarrhalis. On the basis of his observations the author reaches the conclusion that the early use of whooping cough vaccine or of mixed vaccine influences the course of whooping cough favorably in the majority of cases. The vaccine should be injected during the

incubation period, the catarrhal period or, at the latest, the first week of the convulsive stage. If the weather permits, the children should receive fresh air treatment. As a rule, the administration of vaccine is followed by a temperature increase, which however, subsides again after twenty-four hours. In order to avoid unnecessary anxiety, the parents' attention should be called to this reaction and also to a possible temporary increase in the severity of the attacks of coughing in those instances in which the vaccine is given at the beginning of the convulsive stage.

Tubercle Bacilli in Blood.—After calling attention to the fact that hemolysis is superior to the complicated acetic acid method in the demonstration of tubercle bacilli, Busson describes his comparative studies with the Löwenstein culture method and with animal tests. He examined three pleural punctates and 160 blood specimens, 10 of the latter from patients convalescing from poliomyelitis without signs of tuberculosis. These ten all gave negative results, but the three pleural punctates that came from patients with clinical signs of tuberculosis all gave positive results. Of the other 150 blood specimens, 27 (18 per cent) gave positive results in the culture. The animal test was positive in ten cases in which the culture method had remained negative, and the culture method was positive in two instances in which the animal test remained negative. From these results the author concludes that the animal test made with the sediment obtained by hemolysis and not with whole blood is superior to the culture method in the demonstration of tubercle bacilli in the circulating blood. The twenty-seven cases in which the blood culture gave positive results all showed clinical signs of tuberculosis. However, the author's studies also revealed that even in febrile and progressive tuberculous processes the blood may be free from tubercle bacilli, which shows that even in these advanced stages tubercle bacillæmia is not a permanent condition. The examination of blood from twenty-nine patients with cutaneous tuberculosis gave positive results in five cases. Nine, or 42.8 per cent, of twenty-one blood specimens from patients with polyarthritis were found to contain tubercle bacilli, both in the culture and in the animal tests; all of these showed clinical signs of tuberculous infection. In the final evaluation of his observations the author points out that the presence of tubercle bacilli in the blood is not constant, even in clinically identical conditions, but rather periodic or temporary. The bacillæmia seems to be less dependent on the disease as such than on several other factors. In this connection the author discusses immunity processes in tuberculous infection and also the problem of the existence of an ultra-visible form of the tubercle bacillus. He rejects the conclusions that Löwenstein and Reiter deduced from the frequency of tubercle bacillæmia in articular rheumatism, pointing out that articular rheumatism is an extremely rare complication of tuberculosis, and in regard to the theory that articular rheumatism might be a special form of tuberculosis, he answers that it never leads to tuberculous changes in the joints. He is of the opinion that articular rheumatism is a disease entity which, like many other infectious diseases (measles, scarlet fever), disturbs the equilibrium between the attack by the tubercle bacillus and the defense power of the organism.

Monatsschrift für Kinderheilkunde, Berlin

57: 1-80 (Feb. 16) 1933

Comparative Measurements of Sella Turcica During Childhood. Lotte Brill.—p. 1.

*Nonsurgical Treatment of Torticollis During Nursling Age. J. Kelemen.—p. 7.

Treatment of Anemia in Nurslings by Means of Sulphur-Containing Organic Compound. A. Frank.—p. 23.

Roentgenoscopy of Lung in Whooping Cough and Its Clinical Significance. C. Hünemann.—p. 36.

*Serologic Diagnosis of Activity of Tuberculosis by Means of Colloid Buffering. K. Klinké.—p. 49.

Nonsurgical Treatment of Torticollis.—After giving a short history of the treatment of torticollis, Kelemen discusses its incidence, reviews different theories of its pathogenesis, and shows that as yet there is no generally accepted theory. On the basis of his own observations on thirty-two cases, he is inclined to believe that torticollis is not the result of a disturbance in the trophic functions of the central nervous system but rather that it is caused by a defective arrangement of the

muscle and that scar tissue is present. The sternocleidomastoid muscle is more or less contracted, and on palpation it feels hard and thickened. The necropsy usually reveals sinewy, indurated tissues within the muscle. The nonsurgical treatment employed by the author had the object of softening the scar tissue chemically. For this purpose he injected into the muscle from 0.5 to 1 cc. of a substance consisting of chemically pure pepsin in Pregl's solution of iodine. The injections were given twice a week. After from three to six weeks of this treatment, cure was effected in the majority of cases. All children subjected to this treatment were less than 7 months old, the majority less than 3 months. The treatment never had injurious results, and its technic is simple. Other advantages are short duration of the treatment, little pain, possibility of nonsurgical treatment and absence of uncomfortable and expensive bandages. The author thinks that in nurslings this method of treatment should always be tried first.

Serologic Diagnosis of Activity of Tuberculosis.—In the serum of human beings who had active tuberculosis, Klinké was able to demonstrate that an addition of old tuberculin produced changes in the colloid buffering, which is the turbidity that results when acid is gradually added to a serum. This turbidity is caused by the approximation to the iso-electric point. If more acid is added, the serum again becomes clearer. The graphic demonstration of this titration (relation between addition of acid and turbidity) is a curve, the highest point of which is the iso-electric point. If old tuberculin is added to the serum of a patient with tuberculosis, the curve shows a considerable leveling on the descending side, whereas in the serum of normal patients the addition of tuberculin causes only a slight change. The author employed this method on 489 patients. He concludes that colloid buffering following addition of old tuberculin reveals a change in the serum colloids in 94 per cent of tuberculous patients. The nature of the colloidal changes is still unknown, but it is probable that the changes are in the serologically reacting protein bodies themselves.

Münchener medizinische Wochenschrift, Munich

80: 287-326 (Feb. 24) 1933

*Eczema Problem. G. A. Rost.—p. 287.

*Pellagra and Endocrine Disturbances. S. J. Thannhauser.—p. 291.
Remarks on Preceding Article in Regard to Pathologic Anatomy. L. Aschoff.—p. 296.

Explanation of Influence Exerted by Living Organism on Tissue Cultures. W. von Möllendorff.—p. 297.

Causes and Nature of Appendicitis. A. Krecke.—p. 299.
Incidence, Etiology, Symptomatology and Course of Pernicious Anemia. H. Scheidel.—p. 302.

Acute Iodine Poisoning and Iodine Action. I. Lejbowitsch.—p. 305.
Frequent Failure of Hormonal Therapy in Gynecology. O. Pankow.—p. 306.

Problems of Asthma Research. K. W. Tiefensee.—p. 309.
Endoscopic Method of Treatment of Erosions in Sauerbruch Canals. W. Guttenberg.—p. 313.

Roentgen Paper for Stereoscopy of Lung. H. Stelzer.—p. 313.
Demonstration Case for Paper Roentgen Film. F. O. Hess.—p. 314.

Scleroderma and Aeroclerosis. J. Sella.—p. 314.
Peritonissillar Abscess. L. Haymann.—p. 315.

Eczema.—Rost shows that from the etiologic or causal-genetic point of view the definition of the term eczema is no longer tenable. He realizes that this is nothing entirely new, for many conditions to which formerly the term eczema was applied have been proved by recent studies to be different skin disorders. He shows that a number of cutaneous disturbances, still designated as eczema, are really not eczemas but belong to other groups of skin diseases. From this point of view he discusses premycotic, seborrheal and scrofulous eczema, and eczema of the leg. For the latter, which develops on the basis of the status varicosus, he suggests the term dermatopathia cyanotica. He discusses eczemas developing on the basis of metabolic disturbances of external noxae, and finally those in which idiosyncrasy plays a part.

Pellagra and Endocrine Disturbances.—Following a description of the three stages of pellagra and their symptomatology, Thannhauser points out that the theories of the etiology of pellagra reflect the different epochs in medicine. At one time it was considered to be caused by poisoning with food (spoiled maize); then anatomic and bacterial causes were thought responsible until Goldberger established it as an avitaminosis, produced by the lack of vitamin B₃. The author points out that sporadic cases of pellagra occur in all Euro-

pean countries, but since the characteristic cutaneous symptoms of pellagra may be absent or exist only temporarily, the diagnosis may be difficult. In regard to the etiology of these sporadic cases, he thinks that not only primary lack of vitamin B₂ may lead to pellagrous changes, but severe intestinal disturbances of a different pathogenesis may effect such changes in the intestine that vitamin B₂ is poorly absorbed. He reports and discusses the clinical histories of four patients in whom pellagrous symptoms concurred with endocrine disturbances. In one of them the cutaneous manifestations of pellagra were absent, but in the other three the syndrome was characterized by the following clinical manifestations: (1) frequent attacks of gastro-intestinal disorders with colic-like pains and with diarrhea but without noticeable steatorrhea; (2) severe psychic changes, decrease in the mental capacity, mental depression and funicular symptoms; (3) anorexia and emaciation; (4) crops of dull brown discoloration on the entire body, particularly on exposed areas; (5) lanuga-like hairs over the entire body; (6) adynamia; (7) decalcification of the bones with tendency to spontaneous fracture and osteophyte formation on the bones of the phalanges and on the metacarpal bones; (8) attacks of pellagrous cutaneous changes on hands and feet, which usually occur in fall and spring. It is difficult to decide in these cases whether the pellagra was primary, or whether the endocrine disturbances were primary. The anamnesis revealed an earlier pellagrous cutaneous eruption in only one of the patients, but the author is nevertheless inclined to believe that there existed a primary pellagrous disturbance with endocrine dysfunction in all the reported cases. He gives his reasons for this theory and he expresses the opinion that the suprarenals become impaired in the course of chronic pellagra, and that this in turn leads to endocrine dysfunction.

Wiener klinische Wochenschrift, Vienna

46: 225-236 (Feb. 24) 1933

- Investigations on Blood Pressure and Kidney. L. Braun.—p. 225.
 *Tubercle Bacillema in Nervous Diseases. E. Loewenstein.—p. 228.
 Circulatory Disturbances and Capacity to Work. R. Hift.—p. 231.
 Treatment of Carcinoma with Substances from Incretory Glands and with Medicinal Substances. H. Januschke.—p. 237.
 Prophylaxis and Therapy of Avitaminoses During Childhood. R. Wagner.—p. 241.
 Pathology and Clinical Aspects of Influenzal Pneumonia, M. Weinberger.—p. 243.

Tubercle Bacillema in Nervous Diseases.—In summing up his observations on tubercle bacillema in nervous diseases, Loewenstein reviews his former studies on bacillema. He points out that the term tuberculosis includes all the tissue changes produced by the tubercle bacillus. What is usually designated as tuberculous structure is only a facultative phase in the cycle of the tissue changes produced by the tubercle bacillus. Tuberculous infections are possible, without the presence of tubercles. The tuberculous tissue changes are not uniform but are dependent on the quality and the quantity of the strain, on the immunity condition, on the port of entry, on the time of examination and on the resistance of the organs. Tuberculosis is predominantly a vascular disease. The tubercle bacillus affects the endothelium of the vessels and frequently produces tubercles in the intima. These intima tubercles are the source of the blood infection. At postmortem examination the diagnosis of tuberculosis can be excluded only by means of a thorough microscopic and cultural control of the organs, macroscopic examination being insufficient. Tuberculosis is a systemic disease. This is indicated by metastases in all organs, by the characteristic fever curve and by the tuberculin susceptibility of all connective tissue cells. But the surest criterion that tuberculosis is a systemic disease is the occurrence of tubercle bacilli in the blood; that is, tubercle bacillema. By means of his method of blood culture the author has been able to demonstrate tubercle bacilli not only in tuberculosis but also in many other conditions, such as lupus erythematosus, erythema nodosum et induratum, choroiditis, sympathetic ophthalmia, acute and chronic polyarthritis, chorea, multiple sclerosis, retrobulbar neuritis and dementia praecox. He devotes the largest part of this discussion to the occurrence of tubercle bacillema in dementia praecox. He further points out that with his method the tubercle bacilli can be demonstrated not only in the blood but also in the disease foci, particularly in choroiditis, in sympathetic ophthalmia, in retrobulbar neuritis,

in the articular fluids and in the cerebrospinal fluid. The demonstration is possible in the earliest stages, at a time at which roentgenoscopy does not yet permit a conclusion. He states that the detection of tubercle bacilli, being a direct method, has greater demonstrative power than the indirect methods (tuberculin reaction or complement fixation reaction) based on changes in the serum.

Zentralblatt für Gynäkologie, Leipzig

57: 449-496 (Feb. 25) 1933

- *Operative Removal of Arrhenoblastoma Followed by Pregnancy. E. Mathias.—p. 449.
 Influence of Parathyroid Extracts on Genital Function of Female Rats. W. Neuweiler.—p. 456.
 Cyclic Bleeding from an Abdominal Fistula. W. Sigwart.—p. 458.
 *Rabbit Serum Pregnancy Test. H. Hofmann.—p. 462.
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 Simple and Certain Method of Guarding Against Leaving of Laparotomy Sponges in Peritoneal Cavity. E. von Konrád.—p. 485.

Arrhenoblastoma and Pregnancy.—Mathias reports the case of a girl, aged 17, who, with an onset of amenorrhea two years previously, gradually developed the secondary sexual characteristics of a male. The amenorrhea was followed by a change in the voice, the growth of a beard, an enlargement of the clitoris, and a typical male distribution of the pubic hairs. At operation a unilateral ovarian tumor was removed. This was followed by a return to female configuration of the body and the disappearance of masculine hair growth. The voice remained unchanged. The patient married four years later and one year later was delivered of a normal child. The histologic picture of the tumor corresponded accurately to that described by Robert Meyer as an arrhenoblastoma. In addition to a characteristic histologic picture, the tumor gives rise to a typical evolution of the clinical course. The ovary of the patient contained latent masculine cells, which quantitatively were not sufficient to produce symptoms. When, however, these cells multiplied as the result of neoplastic transformation, sufficient heterosexual hormone was elaborated to cause virilization of the patient. The author states that his is the fifth case in literature in which pregnancy occurred after the removal of a masculinizing tumor.

Rabbit Serum Pregnancy Test.—Hofmann describes his procedure as follows: Blood is removed from the patient, centrifugated, taken up with ether and allowed to stand two hours. A female rabbit, weighing about 2.5 Kg., is laparotomized and the ovaries are inspected to exclude pseudotumors, infantilism, malformations and dermoid cysts. Seven cubic centimeters of the serum is slowly injected into the marginal ear vein of the rabbit, and one hour later an additional 6 cc. of the serum is injected. Inspection of the ovaries is made from twenty-two to twenty-four hours later at a second laparotomy. The author applied this test in seventy instances of early pregnancies, pregnancies in the second half and extra-uterine pregnancies. The following advantages over the method of injecting urine are claimed: While the results in the seventy instances were as accurate as those obtained by the Aschheim-Zondek test, the time required was only twenty-four hours, the shortest so far required in any pregnancy test. Macroscopic inspection is sufficient in all cases. The particular usefulness of the test, because of the time element, is in suspected extra-uterine pregnancy.

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- *Cinchophen Jaundice. K. Larsen.—p. 189.
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Cinchophen Jaundice.—Larsen reports a case of jaundice due to cinchophen and presents a tabulated review of the ninety-six cases found by him in the literature, of which forty-two were fatal; in the thirty-five cases with necropsy, acute yellow atrophy of the liver was found.

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PROTEIN NITROGEN AND NONPROTEIN NITROGEN DETERMINATIONS ON GASTRIC JUICE

A CLINICAL EVALUATION

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In an attempt to bring to clinical use the studies reported¹ in 1931 on the total nitrogen and nonprotein nitrogen partitions of the gastric juice, more data have been collected. It has been noted that the normal nonprotein nitrogen constituents were usually to be found within certain quantitative limits and that the fasting juice in normal cases was prone to contain more protein and nonprotein nitrogen than the succeeding ones. Furthermore, it was noted that the benign achlorhydria showed, throughout the period of stimulation with histamine, values higher than those of the normal, but low in comparison with those of gastric carcinoma or of nephritis with marked blood elevation of nonprotein nitrogen.

The following idea was expressed at that time: "It may be that the stomach was acting as an agent for removing these products of metabolism from the body. Whether they are reabsorbed from the lower intestinal tract, whether they are destroyed or benignly conjugated, is an interesting question." Quite recently, Williams and Dick² have made a contribution which in a way answers the query. They have established normal standards for intestinal excretions of nonprotein nitrogen products after ingestion of magnesium sulphate and have shown that they are quantitatively increased in cases of nephritis. As they have also brought the literature up to date, no historical references are necessary here.

METHOD

To establish firmer foundations for normal figures, series of determinations on pooled specimens were run as follows: Gastric juice was obtained from patients who presented themselves for treatment at the Gastro-Intestinal Dispensary of the Johns Hopkins Hospital. A duodenal tube was placed in the dependent portion of the stomach of a patient who had fasted for fifteen hours, and the position of the tube was verified by fluoroscopy. The entire fasting secretion was removed and placed in the icebox. A flow of gastric juice was stimulated by a hypodermic injection of histamine

(ergamine acid phosphate) in amounts equivalent to 0.005 mg. per kilogram of body weight. The entire flow of gastric juice was collected by continuous siphonage (or, if necessary, with the aid of a syringe) into a narrow container surrounded by ice. Any specimen containing a bile tinge was rigorously discarded. After cessation of the gastric flow, all the gastric juice was filtered in the icebox at 7 C. A clear limpid fluid was obtained, practically free from mucus. The pooled specimens reported on in this paper represent a mixture of from six to fifteen individual collections. The material not utilized in this work was used for studies on the proteins and is to be reported separately.

It has been shown that the proteins of the gastric juice are precipitated by tungstic acid at p_H 3.5; consequently, a protein-free filtrate is obtained which can be used by methods described³ for the estimation of amino acid, urea, ammonia and nonprotein nitrogen. The total nitrogen was determined on the whole mixture by the Kjeldahl method. In many instances the precipitate was redissolved in alkali and the protein nitrogen was determined by the same technic.

OBSERVATIONS

The data from eleven analyses of mixtures, in which only specimens containing normal amounts of hydrochloric acid are included, may be seen in the accompanying table. As the figures for any one constituent are fairly constant, the averages of the whole group have some real significance. The protein of the mucus-free gastric juice averaged 22.59 mg. of nitrogen per hundred cubic centimeters of gastric juice. The nonprotein nitrogen was 25.5 mg. per hundred cubic centimeters of gastric juice, a finding quite similar to that of the same constituent of the blood. This was also true of the amino acid nitrogen, of which the average was 7.22 mg. of nitrogen per hundred cubic centimeters of gastric juice. Urea was found in small amounts, averaging 2.58 mg. of nitrogen per hundred cubic centimeters of gastric juice. The constant finding of ammonia nitrogen averaging 5.19 mg. of nitrogen per hundred cubic centimeters of gastric juice in contrast to the almost negligible amount in the blood is extremely interesting, as it awakens speculation concerning the purpose of the urea-splitting enzyme of the gastric juice⁴ and the gastric mucosa.⁵ Uric acid was

3. Martin (footnote 1): Studies on a Urea-Splitting Enzyme Found in the Gastric Juice, *Bull. Johns Hopkins Hosp.* 52:166 (Feb.) 1933; Urease in Gastric Juice: Studies Demonstrating Its Action and Theoretical Consideration of the Methods of Gastric Juice: Hydrochloric Acid Formation and Secretion, *Tr. Am. Gastro-Enterol. A.* 1932, p. 3.

4. Martin (footnote 3) second and third references.

From the Gastro-Intestinal and Chemical divisions of the Department of Medicine of Johns Hopkins University School of Medicine.

1. Martin, Lay: Total Nitrogen and Nonprotein Nitrogen Partition of Gastric Juice Obtained After Histamine Stimulation, *Bull. Johns Hopkins Hosp.* 49:286 (Nov.) 1931.

2. Williams, J. L., and Dick, G. F.: The Excretion of Nonprotein Nitrogen Substances by the Intestine, *J. A. M. A.* 100:454 (Feb. 18) 1933.

5. Luck, J. M.: Ammonia Production by Animal Tissue in Vitro: (1) The Case of Mixed Tissue Extracts, *Biochem. J.* 15:814, 1924; (2) Demonstration of Urease in the Animal Body, *ibid.* 15:825, 1924; Luck, J. M., and Seth, T. N.: Gastric Urease, *ibid.* 18:1227, 1924; The Physiology of Gastric Urease, *ibid.* 19:357, 1925; Rignoni, M.: La presenza d'urease dans la muqueuse gastrique de l'homme, *Arch. ital. de biol.* 84:74, 1931; La presenza di ureasi nella mucosa gastrica umana, *Boll. d. Soc. ital. di biol. sper.* 4:1166 (Nov.) 1929; L'ureasi nella mucosa gastrica dell'uomo e degli animali, *Arch. di sc. biol.* 15:37 (July) 1930.

Data Obtained from the Series of Cases Reported*

	Total Nitrogen	Protein Nitrogen	Nonprotein Nitrogen	Amino Acid Nitrogen	Urea Nitrogen	Ammonia Nitrogen
Normals						
Mixture 1.....	49.20	21.06	27.24	8.44	1.75	5.21
2.....	45.03	18.00	27.03	6.04	1.35	4.37
3.....	44.60	20.43	24.17	7.50	3.37	4.67
4.....	49.98	19.53	30.15	7.17	2.51	4.89
5.....	45.22	17.77	27.45	5.69	2.36	7.48
6.....	56.38	25.63	30.70	8.83	3.46	6.40
7.....	41.97	22.93	19.04	7.00	4.03	3.37
8.....	69.80	44.39	25.40	6.78	2.07	5.18
9.....	45.48	19.40	25.10	7.50	....	....
10.....	37.22	17.20	20.02	7.95	3.50	5.30
11.....	45.02	20.84	24.18	5.00	1.62	5.03
Total.....	529.95	248.43	280.53	79.40	25.62	51.00
Average.....	48.18	22.59	25.5	7.22	2.58	5.19
Gastric Ulcer						
Case 143.....	42.50	21.70	20.80	6.51	1.20	3.51
122.....	66.12	29.70	36.42	7.81	2.86	5.32
116.....	63.18	41.01	22.17	6.94	3.32	0.57
120.....	60.60	40.01	40.59	10.76	4.56	9.02
132.....	68.22	48.34	19.86	4.86	1.10	3.87
138.....	83.70	32.78	40.98	6.54	11.02	3.90
129.....	52.32	24.52	27.80	10.64	5.12	3.62
Total.....	456.70	238.06	217.62	54.06	29.18	38.81
Average.....	65.24	32.55	31.09	7.72	4.17	5.54
Duodenal Ulcer						
Case 146.....	60.66	36.30	17.08	6.02	1.42	3.51
144.....	55.21	17.61	17.60	5.78	1.71	5.23
130.....	66.22	43.12	53.10	19.75	3.15	11.65
137.....	70.00	28.00	42.00	5.00	2.10	10.30
134.....	53.20	21.60	36.60	5.80	2.70	9.30
150.....	45.00	10.30	25.70	4.10	2.35	9.70
Total.....	365.29	165.93	192.08	46.45	13.43	49.89
Average.....	60.83	27.66	32.01	7.74	2.22	8.31
Duodenal Ulcer with Almost Complete Obstruction						
Case 115.....	129.00	47.30	81.80	30.52	18.78	27.07
121.....	102.00	63.16	38.84	11.67	3.21	7.41
Benign Achlorhydria						
Case 118.....	79.98	40.38	30.60	12.23	2.04	9.98
119.....	90.90	40.85	49.95	18.15	5.81	12.97
131.....	85.26	32.79	52.47	19.54	7.04	6.74
126.....	100.00	61.27	38.73	10.79	6.21	7.99
140.....	92.88	54.60	38.28	10.77	2.95	10.53
112.....	109.20	64.07	45.13	6.60	3.00	16.80
113.....	93.00	49.79	43.21	10.90	4.70	14.00
Total.....	651.22	332.75	293.37	88.98	31.75	79.01
Average.....	93.07	50.4	42.02	12.71	4.53	11.29
Pernicious Anemia						
Case 123.....	80.76	33.16	47.60	24.09	3.76	10.80
124.....	89.92	39.72	50.20	14.06	4.52	9.73
125.....	.....	.....	81.70	29.15	15.92	13.39
126.....	.....	.....	65.15	13.65	12.91	6.22
128.....	84.50	20.00	64.50	17.50	7.30	17.40
127.....	75.00	25.50	49.50	17.50	6.20	15.50
117.....	.....	.....	.....	.....	6.28	8.97
Total.....	330.18	116.38	258.65	116.85	56.83	82.01
Average.....	62.54	23.28	50.77	20.31	9.48	13.67
Gastric Carcinoma						
Case 133.....	208.20	114.00	94.82	24.96	6.22	18.64
135.....	240.00	140.04	109.96	31.82	15.62	24.30
139.....	156.36	73.44	82.92	12.42	32.30	34.60
141.....	218.00	93.80	124.20	32.30	12.50	32.30
145.....	180.00	106.00	74.00	34.54	.....	26.60
142.....	.....	.....	63.00	18.00	5.10	16.40
Total.....	1,002.56	527.28	538.90	154.04	74.74	133.24
Average.....	200.51	105.45	89.81	23.67	12.46	25.54
Diagnosis Unsettled Between Gastric Carcinoma and Gastric Ulcer						
Case 114.....	81.80	52.00	28.80	9.02	2.36	16.06

* Expressed in milligrams of nitrogen per hundred cubic centimeters of gastric juice.

not determined in this series of cases, but in those previously reported the average finding was about 1.5 mg. of uric acid per hundred cubic centimeters of gastric juice. Accordingly, there is about 8 mg. of nonprotein nitrogen that is not accounted for. The figures from the pooled specimens agree quite well with those of the individual cases previously reported.¹

The reactions of the normal group have been discussed at some length in order to bring them strongly to the attention of the reader. In order to eliminate repetition, no detailed mention will be made of the changes in pathologic cases. For these data the reader is referred to the accompanying table.

Determinations were made in seven cases of gastric ulcer and in six cases of duodenal ulcer. Although the amounts of protein nitrogen and nonprotein nitrogen tended to be somewhat higher than in the controls, there was no noteworthy change.

The results in seven cases of benign achlorhydria were striking. In this group, both the protein and the nonprotein nitrogen were approximately double those of the control group. A comparison of benign achlorhydria with the analyses of seven cases of pernicious anemia brings out the important point that a great deal more amino acid nitrogen and urea nitrogen were found in the latter condition and that the nonprotein nitrogen rose correspondingly.

A consideration of the proved cases of carcinoma of the stomach reveals the fact that the protein and nonprotein nitrogen fractions were increased from four to six times the normal standards. The nonprotein nitrogen of the blood in all these cases was normal. One patient (114), on whom two operations have been done without biopsy but in whom the surgeon leaned toward a diagnosis of carcinoma, had a normal excretion of hydrochloric acid. This patient is still alive. He showed the following results: protein nitrogen, 52.9 mg.; nonprotein nitrogen, 28.9 mg.; amino acid nitrogen, 9.02 mg.; urea nitrogen, 2.36 mg.; ammonia nitrogen, 16.06. The only abnormalities were the excessive secretion of ammonia nitrogen and protein nitrogen.

There were two patients (115 and 121) with almost complete pyloric obstruction. They recited typical histories of duodenal ulcer with gradually increasing discomfort. The first patient (115) had been vomiting every night for many weeks and had lost considerable weight. Nonprotein nitrogen of the blood was not increased. Roentgenograms showed marked twelve hour retention. The cap was never visualized. The gastric juice contained free tenth normal hydrochloric acid, 28 per cent, and, as is shown in the table, there was a marked increase in the nonprotein nitrogen compounds. In the other case, which was quite similar to the first but of shorter duration, about the same amount of free acid was found. The protein nitrogen was increased and there was but little elevation in the nonprotein nitrogen constituents. On operation, both patients were found to have cicatrizing duodenal ulcers.

Studies were made in cases 143, 122, 138 and 132, as they all offered interesting diagnostic problems. The diagnoses in these four were unsettled between gastric ulcer and carcinoma. In each of them normal or nearly normal protein and nonprotein nitrogen fractions were found:

CASE 143.—A man, aged 62, had had a gastro-enterostomy eighteen years before for relief from a duodenal ulcer. Fifteen years after the operation, signs and symptoms of another ulcer occurred. For a time he was completely relieved by dietetic and nonspecific protein therapy. Symptoms recurred in six

months and he was again benefited by the treatment; one year later it recurred with severe constant pain, nausea and mild anorexia. He had lost about 18 or 20 pounds (8 or 9 Kg.). Naturally the question of a malignant growth was important to settle. Roentgenograms were diagnostic of carcinoma. The gastric juice after histamine showed free tenth normal hydrochloric acid, 22 per cent. The fluid was quite clear and the protein and nonprotein nitrogen fractions were within normal limits. He was again placed on ulcer therapy and during the past fifteen months has regained his weight and is without symptoms.

CASE 122.—A man, aged 64, had had symptoms of peptic ulcer for three years. He came into the hospital because of marked aggravation of pain, loss of weight and anorexia. Stools were positive for blood. Roentgenograms were typical of annular carcinoma. The gastric juice showed free tenth normal hydrochloric acid, 22 per cent, and normal protein and nonprotein nitrogen. He was operated on and a gastroenterostomy was performed. He died five days later of pneumonia. At necropsy the gastric lesion was recognized as benign.

CASE 138.—A man, aged 57, had for years been suffering from abdominal discomfort which had at first been typical of a duodenal ulcer and had been recognized as such by roentgen examination. He was given ambulatory treatment and felt better for some time. In the past five years his attacks had become more frequent and more intense. In the past year his pain had been almost constant; he had lost markedly in weight and had almost no appetite. The gastric juice showed a moderately increased content of nonprotein nitrogen, but only the urea nitrogen was above normal. Roentgenograms were suggestive of annular carcinoma. The patient was operated on and both a gastric and a duodenal ulcer were found. He is now quite well.

CASE 132.—A man, aged 66, had a carcinoma of the prostate which was invading the bladder wall. For some months he had suffered from abdominal pains, which at first were usually helped by food but which had become constant. For six weeks there had been nausea and vomiting. He had lost weight and had but little appetite. Roentgenograms were interesting, although there was a large niche on the lesser curvature where there was an irregularity running down to the pylorus. The duodenal cap was normal, and still there was a marked five hour retention. From the films alone a diagnosis was difficult, if not impossible. There was 42 per cent of tenth normal hydrochloric acid in the gastric juice. The nonprotein nitrogen fraction of the gastric juice was normal and his protein nitrogen was but little elevated. Under rest and diet, his symptoms disappeared. A later series of films showed normal emptying and a marked diminution in the niche. His gastric condition was then considered to be due to a gastric ulcer.

COMMENT

From the observations reported, it seems quite evident that the gastric juice of the normal stomach contains protein nitrogen and nonprotein nitrogen, and that they are to be found within fairly narrow quantitative limits. Amino acids, urea, ammonia and uric acid are among the substances that make up the nonprotein nitrogen content. They also are to be found within certain fairly constant limits.

Studies reported on the observations of these constituents in various types of disease reveal the fact that different amounts are secreted in relation to the type of abnormality.

One of the outstanding factors is that, in a stomach which is unable to secrete free hydrochloric acid, protein and nonprotein nitrogen are demonstrable in increased amounts, and in cases of gastric carcinoma in which no hydrochloric acid is found, very large amounts of the various nitrogenous substances are secreted. In this series there is only one case (114) which is presumably carcinoma and associated with the secretion of

the hydrochloric acid. The patient was found to have normal amounts of protein and nonprotein nitrogen in the gastric juice. It is important that more studies of this nature be done on patients with gastric carcinoma who secrete free hydrochloric acid. A high protein and nonprotein nitrogen finding, especially in cases in which there is no pyloric obstruction, would be of real value diagnostically.

The fact that increased amounts of nitrogen were found in two cases of duodenal ulcer with pyloric obstruction is of importance only if the presence of the retained food can be ruled out. In neither of these cases can one be certain of that.

The most interesting part of the study from a diagnostic point lies in the help one may obtain in cases in which the differential diagnosis between gastric ulcer and carcinoma is difficult. It is common knowledge that gastric carcinoma is seen with some frequency associated with free hydrochloric acid secretion. Furthermore, it is very difficult, if not impossible, to differentiate certain cases by history or roentgen studies. The four cases presented were of this type; in these patients the gastric juice was quite normal. At operation the lesions were benign. The proof of normal amounts of protein and nonprotein nitrogen are of real diagnostic importance in this type of case. The test would become almost diagnostic if it could be demonstrated that gastric carcinoma associated with the secretion of free hydrochloric acid into the gastric juice show these substances in increased amounts. The one case presented here is unfavorable to this point of view, but it must be remembered that the final diagnosis is yet to be made.

A great deal may be said about the similarity between the content of nonprotein nitrogen and amino acid, and the marked divergence between the urea and the ammonia, in the blood and the gastric juice. The almost complete similarity of the first two makes one seriously consider the question of transudation. But how does one account for the finding of such small amounts of such a readily diffusible material as urea and such large amounts of the toxic ammonia? It has been shown that a urea-splitting enzyme is to be found in the gastric mucosa⁶ and the gastric juice;⁴ consequently, it seems quite logical to believe that the small amount of urea present in the juice is due to the fact that it has been split by the urea-splitting enzyme in the mucosa with the liberation of ammonia and the subsequent secretion of the latter into the gastric juice. In keeping with this idea, the larger amounts of urea which were at times found in the gastric juice may represent a diminution in the activity of the urea-splitting enzyme.

If the normal amounts of nonprotein nitrogen and amino acid nitrogen represent transudation from the blood, how may one account for the finding of twice the amount in benign achlorhydria and pernicious anemia and four times the amount in carcinoma? It would seem that gastric mucosa has the power to secrete these products and that, when it is stimulated to secrete hydrochloric acid,⁶ one of two things happens; either the products are secreted at their normal rate and found in lessened concentration as a result of dilution, or when hydrochloric acid is being secreted they are diffused through the mucosa from the blood stream. Another factor of interest in this regard

6. Martin, Lay: Gastric Secretion: The Electrolytes Before and Their Changes at Various Periods After Histamine Stimulation, *Ann. Int. Med.* 6: 91 (July) 1932.

is the fact that, as the nonprotein nitrogen of the blood rises in nephritis, this material may be found to be increased to a somewhat greater degree in the gastric juice.

SUMMARY

1. In the normal gastric juice, protein nitrogen and nonprotein nitrogen fractions (amino acid, urea, uric acid and ammonia) were found in amounts that varied within but small limits.

2. In the benign achlorhydrias the amounts were found to be increased approximately twofold.

3. In the cases of pernicious anemia the same increase was found and associated with still greater amounts of amino acid and urea.

4. In carcinoma of the stomach associated with achlorhydria, large amounts of protein and nonprotein nitrogen were found.

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THE CAVITY IN THE TUBERCULOUS

ITS MANAGEMENT

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Pulmonary cavities persistently excreting tubercle bacilli are dangerous. The patient is a candidate for hemorrhage, aspiration pneumonia, spread by extension, and visceral degeneration. Closure of the cavity is demanded.

New aspects to the problem arise from the fact that, contrary to the former conception of slow formation, cavities can develop acutely from diffuse tuberculous bronchopneumonia. The time factor stands out pre-eminently—selection of the opportune moment for intervention by mechanical measures of treatment. Acute developments require prompt action to obviate the necessity for more radical surgery and to prevent complications. Conservative rest treatment was based on the assumption of treating a chronic systemic disease; but functional rest for the diseased lung and complete closure of the cavity through collapse has loomed forth as a necessary principle of treatment.

PATHOGENESIS

Qualitative classifications of the pathology of cavities and the surrounding disease have been attempted through clinical and laboratory studies, correlated with the x-ray image. This trend has been particularly stimulated by the newer European teachings. Many observers have demonstrated, in pathogenesis, the progression of tuberculous disease from the stage of early infiltration to the young "round elastic" cavity to the old, dense, rigid form. The young cavity represents the first phase in the breaking-down process of caseation with the center perhaps not entirely destroyed. This progresses to the succeeding stage in which cavity walls are composed of soft, pulmonary tissues recently infected by tuberculous foci and eventually reaches the development of fibrous encapsulation. Such classifications should recognize not only the rapid, fluctuating character of the young cavity but also the changes taking place beyond its walls; and thus they stress the importance of the time factor with regard to intervention.

DIAGNOSIS

Physical signs are too unreliable in the study of cavities. Young ones are usually silent, as collateral inflammation, atelectasis and emphysema often disguise them. Therefore, serial roentgenograms are indicated. The laboratory finding of daily expectoration of 1 ounce or more of mucopurulent sputum with a repeated high Gaffky count (unconcentrated) has proved in my experience to be presumptive evidence of a cavity. It is more definitely so when accompanied by elastic fibers or by septic blood counts of high total leukocytes (above 9,000), high neutrophils (above 6,000), and a high proportion of immature white cells (above 16 per cent or a "shift to the left") that are not due to complications. Negative sputums in cavity cases should not be accepted as final until the swallowed gastric contents have been examined for tubercle bacilli. Ninety per cent or more show positive sputum.

FACTORS INFLUENCING CLOSURE

The unusual and not infrequent response of cavities to both surgical and conservative rest treatment compels attention to all the important related factors; namely, the age of the patient, the age, size and number of cavities, the extent and nature of the surrounding and accompanying disease, the location of the cavity and its proximity to the pleural surface (peripheral or central), and the interlobar fissure, as to the possibility of early development of pleural adhesions, the anatomic structure of adhesions when present, the opportunity for free drainage of the cavity from its position, the patency or stenosis of its draining bronchus, and the fixity or movability of the mediastinum and the diaphragm.

PROGNOSIS

In the light of these facts, the depressing prognosis gleaned from the figures of H. L. and L. R. P. Barnes, who showed that 90 per cent of 1,454 patients with cavity were dead within five years, and from those of Sprungmann, who showed that 61 per cent of 626 industrial laborers were dead at the end of two years, will not hold true. Such studies were made among patients in whom the disease was most extensive and destructive, characterized by cavity formation and living under poor economic circumstances, and will not correspond with studies of those showing less extensive pulmonary disease of a more favorable benign character and living under better conditions. The optimistic figures of Fales and Beaudet emphatically reveal the importance of continuous bed rest and a sanatorium regimen alone in the closure of a cavity. They have shown that of 120 patients with cavities treated under such conditions for a period of from twelve to eighteen months, 40 per cent were healed. Stressing the extent of pulmonary pathologic changes and the size of the cavity, they found that in minimal pulmonary involvement (aside from a cavity) 66 per cent closed; in extensive disease, 30 per cent healed. Of large cavities, 23 per cent closed; of small cavities, 66 per cent. The extent of the pulmonary disease as well as the nature of the surrounding pathologic changes can be considered twice as important in prognosis as the cavity itself. Similarly, the outlook varies even more so with extremes of the size of the cavity.

In a personal study of twenty-two young cavities little over 2 cm. in size and surrounded by minimal disease, which were treated with bed rest alone, eleven completely disappeared and five decreased in size during a period of five months.

With bilateral cavities, complete closure by bed rest alone is the exception in all studies. Fales and Beaudet reported healing of 9 per cent.

In elderly patients, old upper lobe cavities, even of large size, with free drainage, are consistent with long duration of life. This is also generally true of cavities if surrounded by only a small amount of disease or if accompanied by productive or fibrotic tuberculosis of even great extent. Cavities in young patients are always of more serious prognostic importance.

The figures of Sampson from the Trudeau Sanatorium (which will appear later in more detailed form) are very significant: Of 392 patients with cavities, only 35 per cent were dead at the end of five years. Death, according to the size of the cavity, was: 2 cm., 19 per cent; from 2 to 5 cm., 42 per cent; 5 cm., 49 per cent. Death according to the amount of disease was as follows: from minimal to moderately advanced, 7 per cent; from moderately to far advanced, 28 per cent; far advanced, 69 per cent.

ROENTGEN AND PATHOLOGIC CHANGES

In roentgen studies, the distinguishing of precavitary disease is still a moot point. The extreme forms of the young and old cavities are recognizable in a large percentage of cases by correlating serial roentgenograms with a study of the entire clinical picture. Intermediate types of cavities that stand between the very young and very old ones often show, even by serial roentgenograms, many variations of definition from surrounding disease, so as to give considerable difficulty of interpretation of age and collapsibility, regardless of the presence or absence of pleural adhesions. Frequently a detailed clinical study helps to interpret.

MODES OF HEALING

Studies of the mode of healing show that central cavities often close by concentric contraction, but peripheral cavities do not and require earlier collapse therapy. Cavities heal by retraction toward a fixed point, such as the hilus and the apex. In retracting fibrosis, they often migrate toward the apex, less commonly downward. Hence, cavities tucked away in the apex can almost always be assumed not to be of recent origin. Loss of space in the closure of a cavity may be made up more easily if the surrounding tissue is elastic. The collapsing of a cavity by mechanical measures, or even its closure spontaneously, is dependent rather on the involvement of the surrounding tissue than on the cavity wall and may even depend on the condition of the draining bronchus. Fibrosis of the lung surrounding a cavity may keep it patent, depending on the direction of the pull. It may also interfere with its closure during collapse therapy, especially phrenicectomy.

Whether young cavities, which are usually surrounded by more elastic lung (or even old cavities), close by a process of bronchial stenosis with production of atelectasis, resulting in a condition of bacterial anaerobiosis, cannot be definitely stated. Future pathologic studies may reveal this. Meanwhile, theoretical conceptions have stimulated the experimental and even clinical use of instillations of silver nitrate to accomplish bronchial closure.

At least 50 per cent of young cavities, if small, with little surrounding disease, can disappear with bed rest, even without leaving a visible trace. Hypertrophy of surrounding pulmonary tissues aids in arresting them. Disappearance in the earliest stage may occur by resolution, leaving no trace, or by fibrotic absorption, lead-

ing to circular densities, as seen by roentgenograms, which persist indefinitely. The healing of old cavities occurs by shrinkage, encystment, obstruction, fibrous absorption or, rarely, calcification. Knowledge of the different degrees of evolution of a cavity will aid in the proper selection of the therapy.

PLEURAL ADHESIONS

Pleural adhesions, bandlike in nature, exist in the region of the upper lobe to the extent of 90 per cent. About 40 per cent are in the area bordered by the second and fourth ribs and the anterior and posterior axillary lines, with not many less in the same area between the scapular vertebral border and the spine.

The frequent occurrence of adhesions of the interlobar pleura is due to the frequent incidence of infraclavicular disease; so selective collapse occurs more often when pneumothorax is given early, before the interlobar pleurae adhere. The level of the interlobar fissure is a favorable site for stringlike or bandlike adhesions. Adhesions at the apex are less serious than those in other portions, because the volume of the upper lobe can be cut down by compression against the bony resistant dome of the chest. A cavity held open by apical and lateral adhesions when the mediastinum bulges frequently enlarges, despite pneumothorax treatment, unless other measures, such as cauterization of adhesions or phrenic nerve operations or attempts to fix the mediastinum, are instituted.

LOCATION OF THE CAVITY

Studies of positions of cavities show that they are often found along the slanting plane of the interlobular fissure, where they will keep open or enlarge if they find a point of anchorage to the thickened pleura. As many as 90 per cent are situated dorsally and at least from 1 to 3 cm. below the apex. Roughly, 55 per cent are found in the region of the subapical branch of the bronchial tree, almost 20 per cent in that of the horizontal ramus, about 15 per cent in that of the apical upper lobe branch, and 10 per cent in the region of the apical branch of the lower lobe. Cavities closer to the apex are likewise closer to the posterior surface of the lung; those in the lower lung are more anterior.

THERAPY

The proper time for collapse therapy in order to prevent the very young elastic cavities from developing into rigid uncollapsible forms, as well as to prevent the formation of adhesions to the parietal or the interlobar pleura, is still difficult of determination, but close clinical watching with repeated stereoscopic roentgenograms in the early development of a cavity will aid in deciding and thus frequently prevent more radical treatment.

When a patient is on bed rest therapy for a period of a few weeks and the cavities show no signs of healing or show enlargement, pneumothorax should be instituted without delay. This can forestall more radical treatment. Persistent cavities, even with negative sputum, should be collapsed, unless the patient remains under medical supervision.

SURGICAL COLLAPSE

The many surgical measures aim at direct closure of cavities and their draining bronchi, or release of tension that keeps them patent, as well as to foster pulmonary rest.

Indications for collapse therapy in the case of an old inactive cavity with little drainage and few bacilli differ

from those of progressive activity, with much sputum, abundant elastic fibers and many bacilli.

Pneumothorax is almost always indicated before an attempt is made at more radical surgery. It accomplishes economic recovery in from 40 to 50 per cent of patients receiving it under the usual indications. Eighty per cent of patients with cavities closed, symptom free and sputum negative, as a result of satisfactory collapse of the lung, regain complete working capacity; those with cavities uncollapsed and sputum positive rarely make an economic recovery. When the cavity is obliterated, results are little worse than when a cavity is not present at the onset. Cavities collapsed and with negative sputum for two years are quite free from the danger of reactivation on reexpansion of the lung.

Collapsing of acute caseous pneumonias, within the first few days after the onset, often forestalls the development of pleural adhesions and at times the usual succeeding hollowing-out process of cavity formation.

Intrapleural pneumolysis or cauterization of pleural adhesions, stringlike, bandlike or finger-like in nature, will increase the number of collapses of cavities otherwise unsuccessful by 10 per cent.

Phrenic nerve operations may diminish the size of and obliterate cavities that otherwise resist pneumothorax. Unaccompanied by other measures they will, as a rule, completely obliterate only the younger cavities with little surrounding disease; the older ones with usual surrounding fibrosis often become smaller, but rarely close. Combined with scalenotomy, they will often close more cavities of small size, but rarely so if they extend below the second rib. Repeated crushings of the phrenic nerve are employed to avoid sacrificing uninvolved lung.

Oleoathorax is at times indicated before thoracoplasty, in an attempt to close cavities present in an adherent or reexpanding lung.

Total posterolateral thoracoplasty is a method of radical surgery, most efficient for collapsing old resistant or adherent cavities; but the smaller the area of lung involved, the smaller should be the amount of normal lung tissue sacrificed.

Old "giant" cavities, usually situated in the upper lobe and adherent, almost never collapse with pneumothorax and rarely with total posterolateral thoracoplasty. They generally require supplementary operations such as anterolateral rib removal, parasternal chondrectomy, secondary posterolateral thoracoplasty, or extrapleural pneumolysis with paraffin, pectoral muscle or rubber-bag filling. Uncollapsed cavities near the mediastinum usually require supplementary rib operations and pneumolysis with packing in the vertebral gutter.

Partial thoracoplasty, aiming at a selective collapse of cavities, is well worthy of trial in many cases of localized disease with cavities not too large, as well as in carefully selected bilateral tuberculosis. In upper lobe disease, collapse of the upper lobe should be the first stage, not only to forestall perhaps a second operation but also to rid the patient of a focus of toxemia and source of possible aspiration. Danger of aspiration into the same lung is very slight. Aspirations usually occur into the opposite side.

The conformation of the chest may be a determining factor in the response of cavities to closure by surgical collapse therapy. Deep and broad chests appear to resist closure, whereas thin, narrow chests with sloping shoulders seem to collapse more readily.

Extrapleural pneumolyses may suffice to close cavities that are not too superficial and not too caseous to perforate, and whose walls are not too rigid and resistant. It is a less shocking operation, and therefore suitable, when indicated, for bilateral disease.

SUMMARY

1. Dangers of pulmonary cavities, namely, hemorrhage, aspiration, spread by extension and visceral degeneration, compel measures of therapy that cause their complete closure and a negative sputum.

2. One ounce or more, daily, of mucopurulent sputum with a repeated high "Gaffky" count is presumptive evidence of a cavity. It is more definitely so when accompanied by elastic fibers or a septic blood count, not caused by complications.

3. Young cavities, usually silent, are not detectable by physical signs. Serial roentgenograms are essential.

4. Extremes of young and old cavities are often recognizable through serial roentgenograms and clinical studies.

5. Strict clinical and roentgen studies are indicated in the early weeks.

6. Timely intervention is essential.

7. Pleural adhesions and rigid cavities may often be forestalled, and so selective collapse is more frequently possible.

8. The extent and nature of the pathologic changes of pulmonary tuberculosis that surround and accompany the cavity influence the prognosis more than the cavity itself.

9. Young cavities of medium size surrounded by little disease disappear in 50 per cent or more of patients on strict bed rest (except, perhaps, in childhood and adolescence). Likewise, cavities without classification of age can heal in 40 per cent of patients under more prolonged bed rest.

10. The age of the patient, the age, size and number of cavities, the location, the drainage, the pleural adhesions and the fixation of the mediastinum and diaphragm have an important bearing on the outlook.

11. Sixty-five per cent of patients with cavities are still living at the end of five years.

12. Old upper lobe cavities with good drainage, especially in elderly patients, are consistent with prolonged life.

13. The more favored sites of cavity formation are also the more common sites of bandlike and stringlike pleural adhesions.

14. Indications for measures of treatment of cavities depend greatly on their related factors.

108 Main Street.

Coping with Abstracted Literature.—Some organization is wanted for sifting and promulgating the knowledge of therapeutics. One of the most serious problems that confronts the worker in all sciences at the present time—and perhaps especially medical science—is to keep pace with the accumulations of knowledge. Medical research is increasing in different parts of the world, and new journals continue to appear. The difficulty of assessing the present state of knowledge is perhaps nowhere greater than in therapeutics, largely on account of the number of publications in which the information must be sought. . . . The difficulty of coping with even abstracted literature is becoming increasingly great. These methods of dissemination of knowledge, though a present aid, will before long break down under pressure, and some better method will have to be devised.—Gunn, J. A.: Remarks on the Outlook of Research in Therapeutics, *Brit. M. J.* 2:391 (Aug. 27) 1932.

THE EFFECT OF SMOKING ON THE
CARBON MONOXIDE CONTENT
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A careful study of the carbon monoxide content of the blood of normal individuals living in New York City has recently been made by Gettler and Mattice,¹ and the suggestion is made that "smoking is apt to be

TABLE 1.—*Percentage of Saturation of Hemoglobin with Carbon Monoxide in the Blood of Normal Nonsmoking Subjects*

Subject	CO Content, Volume, per Cent	Hb. Content, Volume, per Cent	Saturation, per Cent
TL.....	0.29	20.3	1.4
Tr.....	0.38	19.8	1.9
FH.....	0.34	20.3	1.7
M.....	0.26	18.8	1.4
H.....	0.35	20.6	1.7
H.....	0.31	20.6	1.5
L.....	0.23	19.3	1.2
Average.....			1.5

the most conspicuous factor in determining the carboxy-hemoglobin of an individual under normal conditions when he is not exposed to obvious high percentages of carbon monoxide."

Similar observations made at the same time in Chicago confirm this conclusion. Analyses of the carbon monoxide content of venous blood were made on the Van Slyke manometric blood gas apparatus according to the technic of Sendroy and Liu.² Gasometric determinations of the oxygen capacity of the blood were also made in order that the percentage of saturation of the blood with carbon monoxide might be calculated. Determinations were carried out in duplicate.

TABLE 2.—*Percentage of Saturation of Hemoglobin with Carbon Monoxide in the Blood of Tobacco Smokers*

Subject	CO Content, Volume, per Cent	Hb. Content, Volume, per Cent	Satura- tion, per Cent	Comment
R	0.82	20.6	4.0	After smoking 15 cigarettes
B	0.77	21.0	3.7	After smoking 15 cigarettes
Hs	0.64	20.6	3.1	After smoking 12 cigarettes
Q	1.46	21.7	6.7	After smoking 12 cigarettes
A	0.80	19.9	4.0	After smoking 10 cigarettes
K	0.87	20.1	4.3	After smoking 15 cigarettes
Hn	0.79	20.6	3.8	After smoking 10 pipe loads
Hn'	0.87	21.4	4.1	After smoking 10 pipe loads
Hn	0.42	21.0	2.0	Next morning, 12 hours since last smoke
Hn	0.45	21.1	2.1	Evening, same day, 18 hours since last smoke

Normal individuals who do not use tobacco and who are not habitually exposed to automobile gases showed an average saturation of the blood with carbon monoxide of 1.5 per cent (table 1).

Analyses made on the blood of subjects after smoking from ten to fifteen cigarettes showed saturation of the hemoglobin with carbon monoxide varying from

3.1 to 4.3 per cent (table 2). A single determination indicating a saturation of 6.7 per cent cannot be regarded as typical. One subject who smoked a pipe showed a comparable saturation of hemoglobin with carbon monoxide, 3.8 and 4.1 per cent, after ten pipe loads. A sample of blood analyzed in the morning, twelve hours after his last smoke, showed a decrease in saturation to 2 per cent. This was not significantly changed when the blood was analyzed six hours later without smoking in the intervening period.

No symptoms attributable to the presence of carbon monoxide in the blood were encountered in our series.

CONCLUSIONS

1. In a short series of normal individuals who do not smoke, the hemoglobin of the blood was found to be saturated with carbon monoxide, 1.5 per cent.

2. In subjects who smoke, the saturation of the blood with carbon monoxide was found to be from 3 to 4 per cent.

ACID-FAST BACILLI IN THE STOMACH
LAVAGE AND FECES OF TUBER-
CULOUS CHILDRENCAMILLE KERESZTURI, M.D.
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BÉLA SCHICK, M.D.
AND
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Our purpose in this study was to determine the value of stomach lavage and of the examination of feces in finding tubercle bacilli in children suffering with tuberculosis. We also thought it interesting to correlate the results of this method with other more commonly used laboratory procedures which also serve for the demonstration of tubercle bacilli. We studied our cases from different clinical points of view, too, and tried to discover the forms of tuberculosis which, among children, are likely to produce positive stomach lavage results for tubercle bacilli. Finally, we tried to demonstrate the difference of results when obtained for research purposes as compared with the results of similar methods done as the daily routine of a large hospital.

SELECTION OF CASES

The 101 cases studied were all from the Sea View Hospital. Four of them occur twice in this study with more than one year's interval between the two sets of examinations. The ages ranged from 8 months to 15 years. They represent different forms of tuberculosis, some of the patients showing nothing but a positive tuberculin test, others far advanced, bilateral destructive pulmonary lesions. All the cases ranged between these two extremes. Including all the cases, twenty-eight, or 27.7 per cent, of them gave positive results for tubercle bacilli in the stomach content. In forty-one of the cases, only a single lavage was done. In fifty-five of them, on successive days, two stomach lavage specimens were examined. In four cases, three specimens and, in one case, four specimens were studied. In the cases in which the plain smear or the

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From the Lasker Foundation for Medical Research and the Department of Medicine of the University of Chicago.

1. Gettler, A. O., and Mattice, Marjorie R.: The "Normal" Carbon Monoxide Content of the Blood, *J. A. M. A.* 100:92 (Jan. 14) 1933.

2. Sendroy, Julius, Jr., and Liu, S. H.: Gasometric Determination of Oxygen and Carbon Monoxide in Blood, *J. Biol. Chem.* 80:133 (Nov.) 1920.

concentrated smear was negative, at least two guinea-pigs were inoculated.

TECHNIC

Gastric Lavage.—The gastric lavage was obtained in the morning on an empty stomach, from 200 to 300 cc. of physiologic solution of sodium chloride being used. The specimens were allowed to settle at room temperature for a short time, and smears were made of the sediment of each specimen. If the result was negative on this preliminary examination, the specimens were combined and the entire amount centrifugated at high speed for one hour. The sediment was then divided into three parts: One part was examined in the routine manner, i. e., by making smears after centrifugation. The second part was examined in some cases by Armand Delille's method, and if the results were negative on all smear examinations, the third part was inoculated subcutaneously into guinea-pigs.

Feces Examination.—In sixty cases we collected feces the same two days on which stomach lavage was done. The feces were examined as follows:

A heavy suspension of each specimen was treated with commercial antiformin until most of the organic matter was dissolved (ten minutes at 45 C.). The specimens were then centrifugated for one hour at high speed and the sediment was examined by smear for acid-fast bacilli, a mechanical stage being used in order to make a thorough search for the bacilli. No guinea-pigs were used for the stool examinations.

Throat Swab Examination.—In ten cases we obtained from two to four throat swabs of each of the cases, the same days when stomach lavage and stool was collected. The swabs were handled as follows:

The swab was shaken vigorously in 2 cc. of distilled water to obtain the mucus on the swab. To the 2 cc. of the swab washing was added 2 cc. of 3 per cent sodium hydroxide and the tube was incubated at 37 C. for thirty minutes. During incubation the tube was shaken vigorously at frequent intervals. It was then

TABLE 1.—Comparative Study of Ten Cases for the Finding of Tubercle Bacilli by Different Methods

Method	Total Number	No. of Positive Results	No. of Negative Results	Per Cent of Positive Results	Comment
Throat swab.....	10	3	7	30	Smears and culture done
Sputum.....	10	5	5	50	Only smear done
Stomach lavage.....	10	6*	4	60	Smears and guinea-pigs done
Stool examination...	10	6	4	60	Only smear done

* In the one case in which examination of the stool was negative and that of the stomach lavage positive, three lavages and only one stool were examined.

made slightly acid to phenolphthalein, hydrochloric acid being used, and centrifugated at high speed for one hour. The sediment was used to make smears and also cultures.

Sputum Examinations.—The same ten patients from whom we collected stomach lavages, stools and throat swabs were asked to give us sputums collected during the same two days. The sputums were examined directly in the routine manner.

COMPARATIVE STUDY OF THE DIFFERENT METHODS

In table 1, the ten children represented were quite sick and the finding of tubercle bacilli in their excreta

by any method was fairly easy. This explains the high percentages of the positive results by all the methods used. From this small number of cases, one gains the impression that the throat swab is the least effective method of examination for the bacilli. Sputum examinations, of course, are possible only with older children and also they give somewhat lower positive results than do the stomach lavages or stool examinations. However, they give still higher figures than the throat swab examinations.

TABLE 2.—Comparative Study of Stomach Lavage and Stool Examinations Made on the Same Children on the Same Two Days

Method	Total Number	Number of Positive Results	Number of Negative Results	Per Cent of Positive Results
Stomach lavage, smear and pig inoculation.....	60	20	40	33
Stomach lavage, only smear.....	60	16	44	27
Stool examination, only smear.....	60	12	48	20

The Armand Delille modification in our hands did not turn out to be of any special value. The stool examinations showed somewhat higher positive results than the sputum examinations and just as many positive results as the stomach lavage.

In this group of ten children we did not gain by using guinea-pigs for the study of stomach contents because the children excreted such an abundant number of tubercle bacilli that, in each case in which the guinea-pig showed tuberculosis, the bacilli were readily found also in plain smear or in concentrated smear examinations.

However, the guinea-pig inoculations with the stomach contents brought out a greater number of positive results in the next fifty cases studied on the same two days, both by lavage and by stool examinations. These patients were much less sick in general than were the ten patients in table 1.

Table 2 shows the comparative value of stool and stomach lavage examinations with and without the use of guinea-pigs in the previously mentioned sixty cases.

As seen in table 2, if guinea-pig inoculations are not done with the stomach content or stools of tuberculous children, the finding of tubercle bacilli is not much more frequent with the first method. The use of guinea-pig inoculations increased the frequency of finding the bacilli in the stomach washings, as compared with plain smear examinations, by 6 per cent. However, this statement is true only if the children are not very ill with tuberculosis and only a few bacilli are excreted. We can safely suppose that guinea-pig inoculations with the stools of the same children would often increase the frequency of positive results. As it is easier to collect stools than stomach lavage material, we do not see any great reason to give preference to the stomach lavage which, without guinea-pig inoculations, gives only 7 per cent higher positive results.

CORRELATION OF STOMACH LAVAGE RESULTS AND CLINICAL SYMPTOMS

The finding of tubercle bacilli in the swallowed sputum of a tuberculous person means that an ulcerative or destructive process is going on somewhere in the lung parenchyma or some of the hilus or paratracheal glands and that a communication is established between bronchus and lung or gland tissue. This is the most common source of the positive results and for practical purposes the positive results due to a

tuberculous process in the tonsils or adenoids or in the gastro-intestinal tract itself might be disregarded.

Table 3 shows the results of 101 stomach lavages arranged according to the ages of the patients and the clinical diagnosis. As only a few cases are in each two-year age period, this table serves the purpose of showing the distribution of the positive results according to clinical forms of tuberculosis. The age correlation is shown later in wider age units.

As seen in table 3, the clinically identified destructive pulmonary tuberculosis cases show more than twice as frequently positive stomach lavage examinations as those cases which clinically seem to show nondestructive

TABLE 3.—Correlation of Stomach Lavage Examinations and Clinical Diagnosis

Age, Years	Pulmonary Tuberculosis		Hilus Gland Tuberculosis or Only Positive Mantoux		Tuberculous Pleurisy		Bone Tuberculosis		Tuberculous Peritonitis		Number of Deaths		Total Number of Cases
	De-structive	Nonde-structive	De-structive	Nonde-structive	De-structive	Nonde-structive	De-structive	Nonde-structive	De-structive	Nonde-structive	De-structive	Nonde-structive	
0-2	1	5*	1	3	..	5	..	..	..	1	..	2	2 12
2-4	..	1	3	11	..	2	..	2	1	..	1*	1	4 17
4-6	1	..	5	10	..	4	..	1	..	..	..	..	6 15
6-8	4*	1	2	1	..	8	..	3	..	..	1*	1	6 14
8-10	..	..	3	..	..	4	..	..	..	..	1*	1	3 6
10-12	3	..	..	1	..	2	..	1	..	..	1*	1	5 1
12-14	5	..	1	..	..	..	..	..	..	..	..	..	2 1
14-16	1	..	1	..	..	1	..	..	..	..	..	..	2 1
All ages	15	5	12	30	..	26	..	7	1	1	..	4	28 73
Per cent positive results	75	28	0	0	0	0	0	0	0	0	0	0	

* Each star means one death of tuberculosis; + means that tubercle bacilli were found in the stomach content; — means that tubercle bacilli were not found in the stomach content. Under hilus gland tuberculosis or only positive Mantoux test, six cases showed bronchiectasis also.

pulmonary tuberculosis. It is interesting that the cases whose only symptom was a positive tuberculin test, or hilar or paratracheal gland enlargement, were all negative. The tuberculous pleurisy and peritonitis cases also yielded only negative results. Of the two cases of

TABLE 4.—Correlation of Age and Stomach Lavage Examinations

Age In Years	Total Number of Cases	Positive	Negative	Per Cent of Positive Results
A. Nondestructive Pulmonary Tuberculosis				
0 to 4	18	4	14	22
4 to 6	15	5	10	33
6 to 16	9	3	6	33
B. Destructive Pulmonary Tuberculosis				
0 to 8	11	6	5	54
8 to 16	9	9	0	100

bone tuberculosis without clinical symptoms of pulmonary tuberculosis, one showed negative, the other positive, stomach lavage.

Table 3 is not adapted to age study; therefore, we selected our two largest categories in which positive results occurred and tabulated them in wider age groups. In our series, the older age group presented tubercle bacilli in the stomach content more frequently than did the younger age group. The type of pathologic change is the determining factor, according to our experience. This is shown in table 4.

We thought it interesting to classify our cases according to clinical activity. We sized up clinical activity on the basis of temperature, cough, chest signs, weight and general condition of the patient. We called A cases

those which showed no signs, B cases those which showed slight signs, and C cases those which showed very marked signs of clinical activity. As seen from table 5, the positive stomach lavage results correlate very well with our activity classification. The inactive cases show no positive results; the very active cases show positive stomach lavage results twice as frequently as the slightly active ones (table 5).

TABLE 5.—Correlation Between the Clinical Activity and Stomach Lavage Examinations

Clinical Activity	Total Number of Cases	Positive	Negative	Per Cent of Positive Results
A. Inactive	25	..	25	0
B. Slightly active	53	15	38	28
C. Very active	23	13	10	56

We have also considered our patients from the point of view of what happened to them during the two years that we carried out this study. We found that those who went home with apparently arrested cases showed the lowest frequency of positive results. Those who went home against advice, uncured, showed almost twice as often tubercle bacilli in their stomach content.

TABLE 6.—Correlation of Disposition of the Cases and Stomach Lavage Examinations

Disposition of Tuberculous Patients	Total Number	No. of Positive Results	No. of Negative Results	Per Cent of Positive Results
Sent home apparently arrested	44	5	39	11
Went home against advice	5	1	4	20
Died	7	2	5	28

TABLE 7.—Correlation of Pathologic Chest Signs, Fever and Cough and Stomach Lavage Examinations

Stomach Lavage Examination	Total Number of Cases	Pathologic Chest Signs Present	Pathologic Chest Signs Absent	Per Cent Pathologic Signs Present	Cough Present	Cough Absent	Per Cent Cough Present	Temperature Above 100	Temperature Below 100	Per Cent of Temperature Above 100
Positive	28	21	7	75	17	11	60	9	19	32
Negative	73	30	43	41	26	47	36	10	63	13

Six bronchiectasis patients with positive tuberculin tests coughed and had pathologic physical signs probably due to bronchiectasis and not to tuberculosis. All of these cases fell in the negative stomach lavage group.

TABLE 8.—Correlation of Average Age, Malnutrition and Average Gain in Weight According to Positive or Negative Stomach Lavage Results

Type of Cases	Total Number	Average Age in Years	Average Malnutrition in Pounds	Average Gain per Month in Pounds
Positive lavage	28	7.3	0.96	0.43
Negative lavage	73	5.1	1.1	0.85

The patients who died showed almost three times as high a positive finding as the ones who were sent home apparently arrested (table 6).

Next we considered the pathologic chest signs, cough and fever and tried to see whether these symptoms occur more or less frequently in the positive lavage group. We found that all three symptoms are more frequent in the positive than in the negative lavage group (table 7).

As seen in table 8, on the whole, the patients who had a positive stomach lavage were about two years older, they were somewhat less undernourished and gained about half as fast as the patients who showed negative stomach lavage for tubercle bacilli. This means that among children malnutrition is not such an essential symptom of active tuberculosis as it is among adults.

COMPARISON OF THE RESULTS OF THIS SPECIAL PIECE
OF RESEARCH WORK WITH THE RESULTS OF
SIMILAR ROUTINE WORK OF THE
HOSPITAL

Stomach lavage, sputums and feces of some of the 101 cases were examined at different times repeatedly, by the laboratory of the Sea View Hospital, as a routine, and also by our research workers in the Bureau of Laboratories. Because the examinations were done at different times, the results are not quite comparable. We must stress the fact that the laboratory of the hospital did not use guinea-pigs for the stomach lavage examinations; on the other hand, they repeated most of the examinations more often than we did within the scope of this research study. Table 9 shows the difference between the results of the two laboratories.

TABLE 9.—Comparative Study of Routine Work and Research Work on the Same Cases

Place of Examination	Stomach* Lavage				Stool Examination				Sputum Examination				Sputum Examination in Sea View Hospital; Stomach La- vage in Bureau of Laboratories			
	Average No. of Ex- amina- tions	No. of Total Cases	No. of Posi- tive Results	No. of Neg- ative Results	Average No. of Ex- amina- tions	No. of Total Cases	No. of Posi- tive Results	No. of Neg- ative Results	Average No. of Ex- amina- tions	No. of Total Cases	No. of Posi- tive Results	No. of Neg- ative Results	Average No. of Ex- amina- tions	No. of Total Cases	No. of Posi- tive Results	No. of Neg- ative Results
Routine work in Sea View Hos- pital.....	1.2	19	2 10%	17	1.7	29	7 24%	22	7.3	10	7 70%	3	4.3	59	18 31%	41
Research work in Bureau of Laboratories.....	1.8	19	9 47%	10	1.7	29	6 21%	23	2.2	10	5 50%	5	1.5	59	10 32%	49

* In Sea View Hospital, guinea-pig inoculations were not made with the stomach content, whereas in the Bureau of Laboratories all the negative cases were further studied by guinea-pig inoculations.

As shown in table 9, even by routine examinations in a large city hospital, one can expect almost as frequently the finding of tubercle bacilli in the excreta of tuberculous patients if the less careful examinations are made up for by more frequent examinations.

COMMENT

Forty of the 101 cases studied were reported about a year ago. The system of tabulation in the previous article was somewhat different. We had not enough cases for subdivisions; therefore we averaged the different factors and drew conclusions from averages. However, we think that the present method shows a truer picture of the correlations than the former one. Also the present study is based on greater numbers. The somewhat contradictory results can be explained on the basis of the different system of study.

Our results seem to contradict the majority of the publications on the subject because, as a whole, our positive results are scarcer than the positive results of other authors. We also did not find the stomach lavage appreciably superior to other simpler and more frequently used methods.

SUMMARY

1. Among 101 tuberculous children, only 27.7 per cent showed tubercle bacilli in the stomach content.
2. The ages of our children ranged from 8 months to 16 years.

3. The type of cases included in our study varied from children who had no other pathologic clinical signs than a positive tuberculin test to children who had bilateral destructive pulmonary tuberculosis.

4. If guinea-pigs were not used, the smear examination of stools yielded 7 per cent less positive results than the more cumbersome stomach lavage.

5. The Armand Delille modification did not, in our hands, improve the routine stomach lavage first suggested by Meunier.

6. Sputum and throat swab examinations gave positive results less frequently than did stool or stomach lavage examinations.

7. Clinically, destructive pulmonary tuberculosis cases showed in 75 per cent positive stomach lavage results against 28 per cent among the clinically non-destructive pulmonary tuberculosis cases. The other forms of tuberculosis cases did not show positive results except one bone tuberculosis case.

8. Younger children did not show positive results more often than older ones.

9. Clinically, inactive cases yielded only negative results. Slightly and very active cases showed different

proportions of positive results, and activity seemed to parallel the frequency of positive examinations.

10. Positive stomach lavage for tubercle bacilli had severe prognostic significance.

11. Pathologic chest signs, fever and cough generally parallel the frequency of positive results.

12. The average age of the patients with positive stomach lavage was two years higher, the malnutrition somewhat less and the average gain of weight about half as fast as among the cases who gave negative stomach lavage results.

13. As far as sputum and feces examinations were concerned, the routine hospital examination yielded as good results as our careful research study, because more frequent examinations were made.

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The Family Physician and the Specialist.—From the standpoint of the consumer it means that in 80 per cent of his contacts with the family physician the distance traversed to obtain his care is greater in order that in the remaining 20 per cent in which he needs the services of the specialist the distance may be shorter. Only by the greater use of the specialist for matters properly belonging to the family physician can such grouping be justified, but the proposition that presumes to provide more expensive service while at the same time lowering the cost is within itself incompatible, except by involving the mystic word organization.—Harvey, S. C.: *Oikonomia Medika*, *Yale J. Biol. & Med.* 5:323 (March) 1933.

LEAD POISONING FROM THE BURNING
OF BATTERY CASINGS

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BALTIMORE

On June 29, 1932, a Negro girl, aged 7 years, was brought to the Harriet Lane Home at Johns Hopkins Hospital in an unconscious state and admitted there as a patient. The relatives reported that there had been a sudden onset of convulsions followed by stupor. Far across the city on July 25 another Negro girl, aged 10 years, was admitted to the pediatric service of the Provident Hospital in a stuporous condition, with a history of convulsions and intermittent unconsciousness for the previous four days. These two initial cases were followed by others that resulted in the unraveling of one of the most dramatic and fascinating medical and public health problems of recent years.

By September 2, in both sections of the city, a total of forty cases of lead poisoning were discovered, chiefly among children, all in Negro families in which discarded storage battery casings had been used as fuel. The causation of this unique "depression disease" was first determined by Dr. Miriam E. Brailey, intern at the Harriet Lane Home, who has described her discovery made in the home of the first patient as follows:

THE CLUE

The first case of lead poisoning with accompanying lead encephalitis coming to the attention of the Harriet Lane physicians was something of an enigma. A colored girl of seven years was brought in unconscious by members of the family who could give no reliable account of the events leading up to the sudden onset of convulsions and stupor. They furnished the fact, however, that the father had died about a year before of pulmonary tuberculosis and that the child's mother was in failing health, unable to care for herself. With a little prompting from the intern a fairly convincing though rather vague picture was conjured up of familial tuberculosis and quite possibly tuberculous meningitis in the unconscious child. A sister nearly the same age was represented as remaining in the home in constant contact with the failing mother.

Although on the ward a tuberculin test on the patient was strongly positive and an x-ray plate of the chest showed mediastinal tuberculosis, lumbar puncture revealed a fluid much more typical of lead poisoning than of tuberculosis, and after two or three trials stippled cells in good numbers were demonstrated in blood smears. As stupor subsided, a lead line was found along the molars.

The home was visited because of the extremely unsatisfactory history, the story of the mother with supposed tuberculosis, and for the added reason that a source of the child's plumbism might possibly be discovered.

In a squalid Negro quarter, the mother was found sitting on the steps of the home, by no means dying, and in no way suggesting to the observer chronic pulmonary disease. She moved about with difficulty, however, and seemed confused mentally, referring most questions to a large Negro, Melrose Easter, whose eyes were bloodshot and whose breath was strong with whisky. Melrose described the woman's frequent convulsive

seizures. He proved to be the most important informant in the investigation.

Melrose and the mother denied the child's access to fresh paint or plaster, and Melrose took the visiting doctor into every room of the filthy premises in order that possibilities of lead ingestion might be entirely covered. After a fruitless search Melrose bethought himself and brought out the suggestion which proved to be the clue in the investigation. "The Missus had been in failing health for some time, not herself since midwinter when they had moved to their present abode, and now the little girl was terribly sick." He wondered if they could get sick from burning pieces of old batteries; "the smell was bad, even made the food taste"; it appeared to him it might be bad "breathing in the vapors." Melrose had had a year or so at Tuskegee Institute and confided to the doctor that he had had ideas of studying medicine—that he had learned the physiology of bones, lungs and stomachs, but the circulation of the blood had proved too much for him, so he gave up the idea of trying to be a doctor.

Melrose stated that the storage battery casings were used as fuel by colored people all through that city block. They cost nothing and burned very quickly with a smoky flame and a penetrating odor. He disappeared to bring back a large piece to show the investigator. This particular portion on analysis later yielded a positive test for lead.

When it was suggested that the patient's sister, apparently healthy, be brought in for dispensary examination, the mother roused and in a more lucid interval fell in with the suggestion, making the epidemiological observation that, if the child did not have "it" now she would later, for what one got the other did—"leastwise it had been that way with measles, whooping cough and itch."

Melrose saw the investigator down the steps, and on being again reminded of the serious condition of the seven year old child with encephalitis (who was then not expected to live) reverted with a hiccup to the piety of his race; "If you sticks to your religion, Doc, you'll cure her yet."

This home visit resulted in the mother following the 7 year old daughter to the hospital, July 4, where she, likewise, was recognized as suffering from lead encephalitis. The case of the other 12 year old daughter who had remained at home in order to care for the mother was characteristic of the majority of the cases here reported, in that the child had no symptoms, though exposed to this particular source of lead poisoning, and showed a lead line and stippled red blood cells. The cases from the Provident and the Johns Hopkins hospitals with their unusual histories were reported to the city health department, which fact led to the preparation of this clinical and epidemiologic study.

LEAD-BEARING FUEL

It would seem that, because of the recent economic distress, it has been customary for certain junk dealers in Baltimore to allow poor persons to secure, free or at small cost, the casings of discarded storage batteries after their lead plates have been removed for salvage. These casings nearly always carry a considerable deposit of lead salts. They were considered to be excellent stove fuel, and beginning with the winter of 1930-1931 intermittent lead poisoning from inhalation resulted in a large number of Negro families who availed themselves of this type of fuel. In a number of instances the poisoning has extended to the production of encephalitis. Cooperative control measures have apparently resulted in eliminating this unusual health hazard in the city of Baltimore. Reports from Philadelphia, Long Island and Detroit would indicate, however, that it may be looked for in widely separated parts of the country.

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Read, in part, before the Philadelphia Pediatric Society, Dec. 13, 1932.
From the Baltimore City Health Department (Drs. Williams and Schulze), Harriet Lane Home, Johns Hopkins Hospital and the Department of pediatrics, Johns Hopkins University (Drs. Rothchild and Brown) and the Provident Hospital (Dr. Smith).

REPORT OF TWO ILLUSTRATIVE CASES

CASE 1.—History.—E. M., a Negro girl, aged $3\frac{1}{2}$ years, with a past history of croup, measles and pertussis, was first seen in the Harriet Lane Dispensary, July 27, because of convulsions and vomiting. The vomiting began twenty-four hours prior to her admission, and the convulsions occurred several hours after the onset of the vomiting. The child was treated for convulsions and asked to return the next day. In the interim the vomiting had ceased and only one further convulsion had occurred. A diagnosis of pyuria was made, and the child was treated with sodium bicarbonate. She returned to the dispensary, August 8, and gave the story of having been perfectly well. The diet, however, was said to consist almost entirely of meat and bread. Owing to the fact that there was slight enlargement of the epiphyses of the wrists, roentgenograms of the extremities were made. These were reported as showing "increased density at the ends of the bones; lead poisoning cannot be ruled out." August 22, the date of the next return visit to the dispensary, questioning of the mother brought out the fact that the storage battery casings had been the source of fuel of the home for a period of eighteen months and were still being used. At this time, examination of blood smears showed numerous stippled cells. The gingival margins presented an inconspicuous lead line. The diagnosis of lead poisoning was then made. The patient got along quite well until August 31, when quite suddenly she began to vomit "thick black coal-like material." Following this there was a "drowsy and sleepy period." She then refused all food and fluids because of the persistent vomiting. This condition continued until September 2, when the child was admitted to the wards of the Harriet Lane Home.

Physical Examination.—The temperature was 37.4 C. (99.3 F.), the pulse 108, and the respiration rate 24. A very suggestive lead line at the gingival margin was noted. The reflexes were active and equal, no abnormal reflexes being elicited. Neurologic examination was negative except for the stupor and drowsiness. The ophthalmoscopic examination was negative.

White blood cells numbered 7,360; red blood cells, 3,400,000; hemoglobin was 60 per cent. The differential count revealed: polymorphonuclears, 37 per cent; eosinophils, 5 per cent; lymphocytes, 58 per cent; reticulocytes, 10 per cent. A smear showed numerous red cells with punctate basophilic stippling. A spectroscopic examination of the blood for lead was positive. Examination of the spinal fluid showed a positive Pandy reaction. Cells numbered 12 per cubic millimeter, all lymphocytes. Blood and spinal fluid Wassermann tests were negative. Urinalysis revealed: albumin, faint trace; acetone and diacetic acid, +. A roentgenogram showed changes in the ends of the diaphyses, indicating lead poisoning.

The diagnosis was lead poisoning with lead encephalitis and secondary anemia.

Course.—The patient's entire stay in the hospital was afebrile. During the first week the patient had several bad days when she had frequent bouts of vomiting. Otherwise the symptoms were mainly referable to her behavior, which was characterized by periods of anger, irritability, screaming, fighting and restlessness, interspersed with periods of calm and good behavior. Beginning about October 14, uniformly good behavior was the rule.

The secondary anemia persisted. The patient was discharged, October 21, markedly improved. She was advised to be placed on a regular diet, which was to include one quart of milk daily. The use of the battery casing as fuel was prohibited.

The child was seen in the dispensary, November 7 and 18 and December 2. She was clear mentally, cooperated fully and presented no complaints. There was on each examination slight anemia with very occasional stippled red blood cells. The lead line along the gingival margins was still present, as were the characteristic shadows at the growing ends of the radii in the roentgenograms. The patient's mother also had a very definite lead line.

CASE 2.—History.—E. S., a Negro girl, aged 10 years, was admitted to the pediatric service of the Provident Hospital on the afternoon of July 25 in a stuporous condition. The parents were very vague about her recent history and could give but

few details. Apparently during the previous four days she had had several convulsions and had remained more or less unconscious. The only complaint of the child herself had been severe headache of a few hours' duration. Three months previously she had had a short attack of headache and vomiting, which had subsided completely. In the hospital she remained more or less stuporous for three days, though she could be aroused to take liquid nourishment.

Examination.—There was bilateral nystagmus, numerous facial twitchings, and a rigidity of the neck so marked that each attempt to move it caused pain. Deep reflexes were not elicited; there was no Kernig sign. The temperature was 98 F., pulse 100, respiration rate 22.

The child was very tall for her age but markedly undernourished. The teeth showed the extensive decay seen so often in undernourished Negro children, and on the gums was a deposit of black pigment extending from the margins throughout the covering of the alveolar processes, so that a typically distinctive lead line was not demarcated. The mucous membranes were slightly pale; the pupils were regular and reacted to light; the tongue was slightly coated, the pharynx normal; general glandular enlargement was not present. Examination of the heart, lungs and abdomen was entirely negative. The liver and spleen were not palpable. The forehead and tibiae showed a mild old rickets. Examination of the urine was negative except for a trace of albumin. The blood Wassermann reaction was negative. A spinal puncture done on the fourth day after admission showed the fluid to be under normal pressure; there were 20 cells, no globulin; the Wassermann and mastic curve tests were negative.

The original blood count, July 26, gave a good clue to the diagnosis: red blood cells, 3,100,000; white blood cells, 22,500; hemoglobin, 65 per cent; polymorphonuclears, 80 per cent; and in the smear were noted numerous stippled cells amounting to 7 per cent of the total red blood cells. A roentgenogram of the long bones taken shortly afterward was read as negative by the resident radiologist.

Course.—The stupor gradually lessened and the girl became restless and had to be restrained. For two weeks she answered incoherently, seemed confused, showed inattentiveness and enuresis, and persistently sucked her thumb. In other ways her improvement was rapid and on August 17 she was sent home to complete her convalescence. The blood picture at weekly intervals showed no change and the stippling persisted. Another roentgenogram of the bones, August 10, was again reported as negative. The blood was examined spectroscopically at the Johns Hopkins Hospital and found to be positive for lead.

EPIDEMIOLOGY

All of the twenty Negro families that are included in this report lived under conditions of abject poverty and deprivation. This low economic status was associated with a low general mental level. Unemployment was practically universal among the supposed "bread winners." Relatives and "boarders" shared the crowded living quarters and, in many instances, the children slept in the kitchen.

In every case the main or only source of fuel during the period under consideration had been the gratuitously supplied storage battery casings. Investigations of the homes made by dispensary representatives, health department nurses and other agents resulted in the report that the families had been willing to accommodate themselves to the foul odor and massive clouds of smoke caused by using this material for a fuel. It was burned usually in cook stoves much out of repair, which emitted smoke, as did the chimneys. The usual story was that when the rooms became too smoke-laden the doors were opened. Occasionally the same fuel would be used in a small "heating stove" in an upstairs bedroom. In only one instance, because of a neighbor's complaint of smoke and odor, was the burning of this fuel noted in the home of a white family.

Exposure.—In only one case was there discovered any exposure to lead other than that from the battery casings. In this single exception there was a history of pica of short duration in comparison with the exposure to the effects of burning the fuel in question.

All of the families under consideration availed themselves of the poison-bearing fuel during the winter months of 1931-1932 and during subsequent months. Of the twenty families, one had done so during two previous winters (one case) and two other families for the winter of 1930-1931 as well as for 1931-1932 (two cases). Two other families (three cases) apparently began using the fuel during the spring of 1931. In no case was the period of exposure less than four months. In the majority of cases there was intermittent exposure from six months to one year. Exact histories were very difficult to secure but, in general, it was felt that intensity of exposure was more responsible for the poisoning than was the duration of exposure.

Geographic Distribution.—There were found to be two major foci for the distribution of the discarded battery casings. These foci were about three miles apart. One was a junk shop which discarded about 500 batteries a week and which was responsible for the seven cases in the one family which were studied at the Provident Hospital. The other focus was the chief cause of offense, a junk shop across the city which handled for discard approximately 2,000 batteries a week. It was within one city block of this shop that twenty of the cases occurred. The shop was responsible for nearly all the cases discovered and in all probability for a great many more. In the radius of several city blocks of this largest dispenser of fuel were discovered four other minor ones. Two of these handled about seventy-five batteries each per week and the two others about fifty each. In all, six junk shops were found with a total weekly discard of about 2,750 batteries.

Sex, Age and Familial Incidence.—Of the forty cases here reported, seventeen were male and twenty-three were female.

The ages represented were as follows: under 1 year, one; 1 year, two; 3 years, one; 4 years and 5 years, three each; 6, 7, 8 and 9 years, four each; 10 years, five; 11 years, one; 12 years, three; and 13, 14, 34, 35 and 49 years, one each. Since the patients were sought out for special examination at pediatric dispensaries, no significance is attached to the age distribution of the forty cases. The group happened by chance to include three affected mothers. One of the adults developed encephalitis. No attempt was made to survey the cases completely throughout the city, although prompt control action was taken with all the known distributing agencies. There is every reason to believe that a more thorough search in selected homes would have revealed other affected children and adults.

Among the twenty families studied, multiple cases were found as follows: two cases each in five families, three each in three others and four and seven cases apiece in two other families. Besides these thirty multiple cases there were ten instances of one case only per family.

Symptoms and Signs.—Of the forty patients, only seventeen gave a record of subjective symptoms. Five patients showed the most alarming condition induced by lead; namely, encephalitis. These were the only cases in which medical relief was sought. The clinical picture of headache, dizziness, stupor or unconscious-

ness, convulsions, nausea and vomiting, with or without increase in the tendon reflexes and stiffness of the neck has been described repeatedly¹ and is shown by the two illustrative cases.

Symptoms noted in other cases were nausea and abdominal pain with constipation or vomiting in six cases, headaches and dizziness in four other cases and a combination of these in two additional cases.

Of diagnostic signs the well known lead line on the gums was noted in thirty cases. Characteristic roentgen signs, that is, a band of increased density at the rapidly growing ends of the long bones, indicative of lead deposit,² were noticed in twenty-five cases. Among these were several in which the band appeared doubled (a small zone of lessened density between two zones of increased density). This double banded appearance was first interpreted as indicating two separate periods of exposure to the lead fumes with an interval between them but on careful study proved to mean merely exposure to lead at a date several months previously. The expected stippling of the red blood cells was seen in twenty-three cases and moderate anemia in fourteen cases.

Spectrographic analysis of the blood was made by Dr. P. G. Shipley and his associates³ on eleven of the patients. In each instance the presence of lead in the circulating blood was detected by this method.

Laboratory Results.—Studies made in the city health department laboratories revealed (1) that the gray brown deposit found on the discarded battery casings consisted chiefly of lead sulphate, with some admixture of lead peroxide; (2) that, on burning, the casing material produced intense heat and large volumes of smoke which gave a positive lead test, and (3) that lead was present in soot taken from a stovepipe in a home in which the casings had been used as fuel.

CONTROL MEASURES

Promptly after the existence of this unusual type of lead poisoning was brought to the attention of the Baltimore City Health Department, series of control procedures were instituted which have apparently eliminated the health hazard from the city. These included (1) a health department warning to the proprietors of the junk shops to refrain from further distribution of battery casings for use as fuel, and a similar notice in the homes to prevent the continuance of the dangerous practice of burning them; (2) similar instructions to the proprietors of the junk shops, through the police commissioner and his field force; (3) home visits by public health nurses for instruction of the families concerning the dangers involved in using the battery cas-

1. An Historical Account of Occurrence and Causation of Lead Poisoning, *Common Occurrences in Children*. M. J. Australia 1: 148 (Feb. 4) 1922. Little, H. M., and Blackfan, K. D.: Recurrent "a Child of Five Years, Am. J. Dis. Child. 41: 485 (March) 1931. Caffey, John: Clinical and Experimental Lead Poisoning: Some Roentgenologic and Anatomic Changes in Growing Bones, *Radiology* 17: 957 (Nov.) 1931. Vogt, E. C.: Kasahara, M., and Hiroshima, H.: *Veränderungen bei Bleivergiftung von Säuglingen*. Ztschr. 53: 587, 1932.
2. Park, E. A., in *Congenital Syphilis Observations*, Am. J. Dis. Child. 32: 386 (Sept.) 1926. Park, E. A., Jackson, Deborah, and Kajdi, by Lead in the N-Ray Pictures of the Growing Skeleton, Am. J. Dis. Child. 41: 485 (March) 1931. Caffey, John: Clinical and Experimental Lead Poisoning: Some Roentgenologic and Anatomic Changes in Growing Bones, *Radiology* 17: 957 (Nov.) 1931. Vogt, E. C.: Kasahara, M., and Hiroshima, H.: *Veränderungen bei Bleivergiftung von Säuglingen*. Ztschr. 53: 587, 1932.
3. Shipley, P. G.; Scott, T. F. M., and Blumberg, T. H.: The Spectrographic Detection of Lead in the Blood as an Aid to the Clinical Diagnosis of Plumbism, *Bull. Johns Hopkins Hosp.* 51: 327 (Nov.) 1932.

ings as fuel, and in order to assist in bringing additional sufferers to the dispensaries for examination; (4) warnings by repeated press releases and by radio broadcast; (5) arrangements by the city engineer for the safe disposal of all discarded battery casings (to the extent of several truck loads daily) at the city incinerators; (6) the substitution by the Family Welfare Association of a safe fuel in certain homes and (7) a special notice in the October, 1932, issue of *Baltimore Health News*.

As a result, further warnings were issued by the Maryland and New York State health departments, by the Indiana State Board of Health and through notices in *THE JOURNAL*, the *Survey* and *Industrial Medicine*. An additional national warning was sent out by the Lead Industries Association from New York, which led to similar notices by the National Association of Waste Material Dealers and by the National Battery Manufacturers' Association. Following the discovery of plumbism from similar causes in a Negro child in Detroit in December, warnings were also issued by the health department of that city.

COMMENT

In their monograph on lead poisoning, referring to lead encephalopathy, Aub, Fairhall, Minot and Reznikoff⁴ state that "perhaps the most dramatic manifestation of lead poisoning and at the same time one which is of the most serious prognostic import is the development of acute mental changes. This condition, known as encephalopathy, was described as early as 1837 by Grisolle."⁵ Further, they state that "in so-called lead encephalopathy the meninges are primarily involved or, in other words, the disease is really a meningopathy." In their clinical description of plumbism these authors state that in almost every case "there is a change in the mental attitude which may be so slight as to be overlooked entirely, or may consist of sudden sluggishness and dulness, with poor memory, inability to concentrate, and a tendency toward restlessness and irritability." They point out that lead encephalopathy may develop suddenly and without warning or gradually with exaggeration of the symptoms just mentioned. In addition thereto there may be restless sleep, general nervousness, mental depression, persistent headache, vertigo, faintness, transient paralysis, tremor of the hands and tingling sensations before the onset of general convulsions.

The classification of lead encephalopathy by Grisolle into three types—convulsive, comatose and delirious—is referred to and Grisolle is said to have found the convulsive or epileptic form to be the most common and serious. The authors point out the interesting observation "that lead is not usually found in the spinal fluid in encephalitic patients" but that there is usually "an increase in the pressure of the spinal fluid with an increase in the number of cells, especially of lymphocytes . . . ; while the Wassermann test is negative." Apparently there is some statistical evidence that a large percentage of patients with lead encephalopathy die, although there were no fatal cases in the Baltimore group here reported. Aub and his associates state that "if the patients survive, their mentality sometimes

remains distinctly changed. They are apt to have melancholia or dulness or a poor memory and mental sluggishness."

These authors, in describing the main portals by which lead enters the body, namely, the respiratory tract, the gastro-intestinal tract and the skin, indicate that study of the industrial lead hazards has emphasized, since the time of Stockhusen,⁶ that dusty trades are the most dangerous. As a consequence, more attention should be given to the respiratory tract as a portal of entry for lead. Animal experimentation on lead poisoning by insufflation was carried on as early as 1840 by Tanquerel.⁷ In 1909, Goadby⁸ "showed that when animals were confined in an atmosphere of lead dust, toxic symptoms developed more quickly than when ten times as much lead was administered by mouth." In general, it is felt that lead finds the most rapid entrance into the human body through the respiratory tract and thus into the systemic blood supply. The monograph by Aub and others includes a bibliography of 500 titles.

A discussion of the causation and epidemiology of the forty cases that constitute the basis for this report was presented before the Philadelphia Pediatric Society, Dec. 13, 1932. We are indebted to Dr. Edward S. Thorpe, Jr., of that city for a report of an isolated case of similar nature, which was discovered on the following day, as the result of our paper, in one of the hospitals in that city. A 14 months old white child from a poverty stricken family was brought to the hospital in a semistuporous state, with a history of an illness during the seven previous days which was characterized by anorexia and vomiting. Two days before admission, the child became stuporous. On questioning, the family affirmed that they had been using discarded storage battery casings for fuel over a period of two months and that the child had been exposed to the fumes in the kitchen. Roentgen examination of the bones indicated lead deposits, and there was stippling of the red blood cells.

In connection with this case it is of importance to note that a city must protect itself not only against the use of its own discarded storage battery casings as fuel but also against the importation of such material from other municipalities. A restudy of the disposal of discarded batteries at the Baltimore shops, made by the health department in March, 1933, indicated that in no case was any of the dangerous material being given away to poor families, but batteries were either being sent to the city incinerators or being shipped out of the city for salvage.

A reinvestigation of certain homes in the affected neighborhoods, made also during March, 1933, resulted in reports that this type of fuel would not be used in them because of the inherent danger and because it could no longer be obtained. Hard or soft coal had been substituted. The mother of the children studied at the Provident Hospital stated that "her children were all well" and that "she would never use battery casings again." Her neighbors said that they could not get any more batteries, nor did they want to use them, as they knew of the danger. The reliability of these facts was

4. Aub, J. C.; Fairhall, L. T.; Minot, A. S., and Reznikoff, Paul: Lead Poisoning, in *Medicine Monographs*, Baltimore, Williams & Wilkins Company 7, 1926.

5. Grisolle, A.: Recherches sur quelques uns des accidents cérébraux produits par les préparations saturnines, *Bureau du Journal Hebdomadaire*, Paris, 1836 (quoted by Aub et al.,⁴ p. 189); Quelques accidents cérébraux produits par l'affection saturnine, *Gaz. hebdom.*, 1837, numbers 40, 50, 51, 52 (quoted by Meillère, Gédéon: *Le saturnisme*, Paris, 1903, and by Aub et al.,⁴ p. 210).

6. Stockhusen, S.: De lithargyrii fumo, noxio, morbifico, ejusque, metallicis frequentiori morbo vulgo dicto Hütten-Katze, *Gieslar*, 1656. (Translated from Latin with commentaries by J. J. Gardane, Paris, 1776; quoted by Aub et al.,⁴ p. 45).

7. Tanquerel des Planches, L.: Traités des maladies de plomb, ou saturnismes, Paris, 1839. Meillère, Gédéon: *Le saturnisme*, quoted by Aub et al.,⁴ p. 45.

8. Goadby, Kenneth: A Note on Experimental Lead Poisoning, *J. Hyg.* 9: 122, 1909. Aub et al.,⁴ p. 45.

attested by a simultaneous review of the situation at the city incinerators, where the discarded material was being received and burned.

SUMMARY

1. A group of forty cases of acute lead poisoning have been discovered, due in all probability to inhalation, wherein discarded storage battery casings have been used in poor Negro families as a "depression" fuel.
2. The majority of the patients had no serious subjective symptoms and experienced only slight discomfort. Among the group, however, were several patients with severe encephalopathies.
3. Both children and adults were affected. The cases here reported were nearly all in children, as the study was made as a pediatric investigation.
4. Intensity of exposure rather than its duration seems to have been chiefly responsible for the causation of poisoning.
5. The dangerous fuel was distributed free, or at small cost, by junk dealers after salvaging lead plates from discarded storage batteries.
6. Control measures have apparently resulted in the elimination of this health hazard in Baltimore.
7. Situations similar to the one here reported have more recently been described as occurring in Detroit, in Philadelphia and on Long Island and may be looked for in other places.
8. The experience at Baltimore demonstrates an example of widespread cooperation between hospitals, dispensaries, city health, police and engineering departments, junk shop owners and civic relief agencies for the protection of the health of the poor in times of economic distress. In this the press and the radio have played a large part.

STERILE MENINGITIS FOLLOWING
LUMBAR PUNCTURELEWIS M. HURXTHAL, M.D.
BOSTON

Reactions following lumbar puncture should be of interest to the surgeon as well as to the internist in view of the widespread use of spinal anesthesia during the past few years. Usually the only reaction following lumbar puncture is headache. When some substance is injected into the spinal canal, local irritation might be expected, and probably occurs frequently, although it rarely produces symptoms.

I have seen one case in which, following spinal anesthesia, mild meningeal symptoms developed. The spinal fluid showed not more than 100 cells, which were mostly polymorphonuclears. There were no organisms seen in the centrifuged fluid, and attempts to culture bacteria failed. Physical signs disappeared within twenty-four hours.

Streptococcus meningitis followed spinal anesthesia in a patient whom I saw in consultation outside the clinic. The cell count varied between 1,000 and 2,000 per cubic millimeter on repeated examinations, and streptococcus was cultivated on three occasions. After repeated drainage from both cisternal and lumbar regions, together with irrigation with saline solution the patient recovered.

REPORT OF CASE

A woman, aged 29, came to the clinic complaining of weakness of the legs and of backache. The general physical examination gave negative results except for neurologic signs suggesting early involvement of the spinal cord. The knee jerks and ankle jerks were markedly exaggerated in contrast to the biceps and triceps jerks. A pseudoclonus, maintained for from ten to fifteen contractions, was found on several examinations. The abdominal reflexes were sluggish, particularly on one side. There was no spasticity in the legs. It was felt that the patient was suffering from a functional disorder, but in view of her long history, it was thought wise to rule out, so far as it was possible, organic disease of the nervous system by analysis of the spinal fluid.

A lumbar puncture was done with a fairly large needle, so that pressure readings could be obtained. The procedure was carried out without difficulty, but the pressure readings were unsatisfactory. Ten cubic centimeters of clear, colorless fluid was collected and the needle withdrawn. The patient was kept flat in bed the rest of the day. At 6 o'clock, she complained of slight headache. This was partially relieved by acetylsalicylic acid. The next morning the headache was still present, and the patient had a stiff neck. The temperature was 102.5 F. A Kernig sign was elicited. Meningitis was immediately and fearfully suspected. Immediate lumbar puncture was performed, and a cloudy fluid was obtained. Following neurologic consultation, a combined cisternal and lumbar puncture was done because of the unsatisfactory pressure reading found at the first tap. It was thought that an abscess might have been punctured, and that a block in the canal might exist. However, free communication was demonstrated between the cisternal and the lumbar levels; the fluid from both sources was cloudy; the pressure readings were not above the normal range. The lumbar needle was left in place, and continual drainings were made during the next eighteen hours. At this time, no growth was obtained on various culture mediums from two laboratories. The needle was then withdrawn. During the period of drainage, fluids were given in large amounts both by oral and by intravenous routes in order to supply as much spinal fluid as possible and also because of suspected infection.

Examination of the blood before lumbar puncture showed: white blood count, 8,400; hemoglobin, 70 per cent, and red blood count, 4,390,000. Examination of the blood after lumbar puncture during fever showed a white blood count of 7,600.

Spinal fluid findings on first examination showed: initial pressure, 60 mm. of water; sluggish reaction to jugular pressure, results unsatisfactory; appearance of spinal fluid, clear and colorless; cell count, 0; total protein, 45; colloidal gold reaction, 001100000, and Wassermann reaction, negative.

The first tap after the reaction showed: appearance, opalescent; cell count, 1,130; polymorphonuclears, 86 per cent; mononuclears, 14 per cent and total protein, 145 mg. per hundred cubic centimeters. The second and third taps after the reaction showed in the cisternal fluid: cell count, 1,370; polymorphonuclears, 90 per cent and mononuclears, 10 per cent; in the lumbar fluid: cell count, 1,590; polymorphonuclears, 78 per cent, and mononuclears, 22 per cent.

The patient's fever subsided within thirty-six hours, and the headache disappeared in much less time. The convalescence was uneventful. The patient was seen again six months after the event, at which time the neurologic examination gave negative results. By encouragement and appropriate psychotherapy, she had, incidentally, greatly improved.

I have concluded that this was an unusual sterile reaction to lumbar puncture. It is possible that a small quantity of procaine hydrochloride was carried to the spinal canal, as the needle was pushed through the small area in the skin which had been injected. Otherwise, I know of no way in which the nerve structure could have been irritated, except by direct injury. Repeated taps, therefore, probably increased the trauma and intensified the reaction. Yet without knowledge of the result of attempted culture, I believe that free drainage should be carried out in such cases until it has been established that the process is not due to bacteria.

A SIMPLE AND CERTAIN METHOD OF CONFINING THE HANDS DURING OPERATION

WILLARD BARTLETT, JR., M.D.

ST. LOUIS

Other surgeons than myself must be dissatisfied at times with the usual methods employed to confine a patient's hands on the operating table. The widely used leather cuff fits inexactly about the forearm and, especially in women whose arms are stout but whose hands are small, does not prevent the hand from being withdrawn through it. This happens at particular points during an operation and in relation to definite stimuli that get through to the patient's sensorium:

1. It occurs after the operative field has been draped and during the induction of deep anesthesia. 2. The patient who is being placed under a light degree of inhalation anesthesia, analgesia having been obtained with local infiltration or nerve block, may, if he is of an excitable temperament, move his hands continuously during the operation. 3. The patient may free them when a new portion

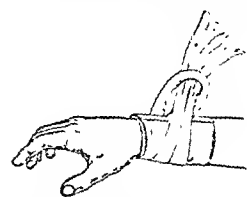


Fig. 1.—A loop of heavy muslin bandage encircles the wrist, which is protected by a folded towel.

of the field is invaded, particularly when traction is applied, as to the structures enclosing the cystic duct and artery after the gallbladder has been dissected free of the liver or to the cervix of the uterus following division of the broad ligaments during an abdominal hysterectomy. 4. As the inhalation anesthetic is withdrawn during the final closure, the patient may react and succeed in freeing a hand before the sterile dressings are applied. A free hand is directed automatically to the operative field, presumably as a defense reaction. Few extraneous occurrences are more trying to the operator than to have to abandon a precisely exposed operative field or to have his assistants let go of retractors in order to

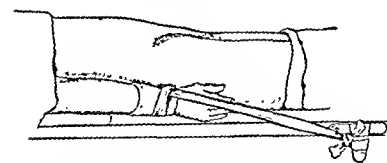


Fig. 2.—The bandage is attached to a convenient portion of the operating table, not far from the level of the patient's knees.

head off through the drapings a hand that is trying to find its way into the incision and to hold it out of the way while a nurse recaptures the patient's hand and refastens it, with no guarantee that it will not get loose again.

For the past year and a half I have followed the plan illustrated in the accompanying sketches. Two points contribute to its complete success. 1. The noose around the wrist grows snugger if the patient struggles. 2. The arm is maintained in extension, preventing flexion at the elbow with pronation of the forearm which offers an entering wedge for the hand against any cuff of fixed diameter and shape. The method in detail follows:

The wrist is snugly encircled by a folded surgical towel which extends downward as far as the level of the thenar and hypothenar eminences. The wrist is then encircled by a doubled muslin bandage, and the ends are pulled through the looped end, making a slip noose which is drawn up snugly just above the level of the styloid processes of the radius and ulna; the point

on the noose at which the ends pass through the loop should be opposite the styloid process of the radius. The arm is then laid on the operating table at the patient's side in complete extension, and the ends of the noose are passed around the leg of the table and tied securely, keeping moderate tension on the arm. A thin dressing pad is placed under the elbow. The folded towel under the noose prevents more than a slight degree of interference with superficial venous return from the hand, and interference with the arterial flow, deep venous return or nerves at the wrist is impossible with this method. A patient in the Trendelenburg position, if conscious as in spinal analgesia, will occasionally have so much discomfort from the added countertraction on the wrists after the head of the table is dropped that the extension will have to be slackened a little. I have not seen a single hand escape from this confinement since I started using it.

Clinical Notes, Suggestions and New Instruments

PENETRATION OF THE UTERUS BY GOLD STEM PESSARY

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This case is reported to reemphasize the danger to life and health from the use of the gold stem cervical pessary, commonly used as a contraceptive measure.

Mrs. C. J. C., aged 30, the mother of two children, aged 3 and 4 years, was admitted to the Kennedy Deaconess Hospital, Dec. 16, 1932. A sister had died several years previously of pulmonary tuberculosis. The family history was otherwise of no importance. Two and one-half years previously an abdominal operation had been performed elsewhere, at which time she had been told that a cyst had been removed from the left ovary.

There was no history of a miscarriage; the last pregnancy had terminated at full term three years previously. The menses occurred every three weeks; the flow was profuse, continuing for from eight to ten days. Pain was quite severe at the beginning of the period, and the patient was usually confined to bed for two days.

The chief complaint at the time of admission was pain in the left lower quadrant. This had been present prior to the pelvic operation two and one-half years previously and had recurred only in the last three or four months. She also complained of back pain and pain low in the left lumbar region. The pain had always been more severe while she was menstruating, and during the last period she had been confined to bed for one week.

Slight dysuria and frequency had been present during the past three or four months. The day frequency was hourly; nocturia, one or two times. Early in the summer, blood had been passed on a few occasions.

The patient was pale, weak, undernourished and subacutely ill. She weighed 98 pounds (44.5 Kg.). The blood pressure was 130 systolic, 88 diastolic. The temperature was 98.6 F.; the pulse, 72; the respiration rate, 24. The pupils were equal and reacted to light and in accommodation. There was tenderness in the left lower part of the abdomen, but there was no rigidity and no mass was palpable. There was slight tenderness on percussion over the left kidney. The cervix was normal to palpation; the uterus was normal in size and movable. There were no masses in the region of the adnexa, but tenderness was present on the left side.

The white blood count was 13,700; the red blood count, 3,500,000; hemoglobin, 75 per cent.

Examination of the urine showed from 20 to 30 pus cells to the high power field.

Because of the tenderness in the left kidney region and the history of frequency and hematuria with pus cells in the urine, it was decided to perform a cystoscopic examination.

A roentgenogram of the region of the kidneys, ureters and bladder made prior to the cystoscopic examination showed the presence of a gold stem pessary in the pelvis. The cystoscopic examination was completed, however; specimens collected from both kidneys were negative for pus on microscopic examination. A bilateral pyelogram was made, iopax being used as a contrast medium. Normal calices, pelves and ureters were visualized on both sides. There was some inflammation at the neck of the bladder that was sufficient to account for the presence of pus in the catheterized specimen from the bladder.



Fig. 1.—Prong of pessary perforating left horn of uterus.

When informed of the presence of the pessary, she denied knowledge of its presence, stating that she had been told that it had been removed two years previously and that the abdominal operation for ovarian cyst had been performed since that time. She stated that it had been inserted about two months subsequent to the termination of her last pregnancy as a contraceptive measure.

Removal of the pessary was advised and an attempt was made, December 18, to dilate the cervix and remove it by

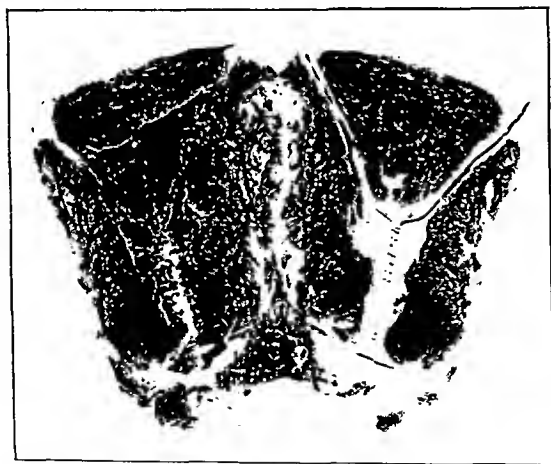


Fig. 2.—Uterus after being opened, showing pessary firmly embedded.

this route. The cervix was very fibrous and the os almost pin point in size. In the attempt at dilation a tear occurred into the posterior culdesac. Abdominal hysterectomy was thought to be the safest procedure, and this was done.

When the abdomen was opened there were many adhesions about the uterus; one limb of the pessary had completely penetrated the uterine wall and was projecting into the abdominal cavity. The left ovary had been removed previously; the right ovary appeared normal. A subtotal hysterectomy was done, the cervix, including the base of the pessary, being

coned out. The illustrations show the uterus with the pessary in place.

The pathologic examination was made by Dr. E. D. Hitchcock of Great Falls, Mont., who reported that one prong of the gold stem pessary perforated the uterine wall at the left horn. When the uterus was opened, a small quantity (4 cc.) of thick mucoid material was present. Sections made through the mucosa showed marked round cell infiltration in the mucosa and submucosa. There was an increase in the fibrous tissue. The walls of the blood vessels were very thick. The cervical canal was very small and was identified with difficulty.

The postoperative course was uneventful and the patient's general condition has gradually improved.

Special Article

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1932

TWENTY-FIRST ANNUAL REPORT

This report concerns the same ninety-three cities with a population of more than 100,000 that appeared in the corresponding report for 1931. The number of deaths from typhoid during 1932 in each city (except Scranton, as explained in note to table 2) has been supplied by the respective health department. The rates are calculated on the basis of the population figures for July 1, 1932, as estimated by the U. S. Bureau of the Census, except in the few instances (noted in the tables) in which such estimates were not made; in the latter, the population figures of the 1930 federal census were employed.

It should be noted that the figures for deaths from typhoid include all that have occurred within the city limits, those of nonresidents as well as of residents. It is greatly to be desired that more information should be placed on record respecting the place of residence of decedents, since it is evident that the present statistical practice of tabulating deaths according to the locality in which they happen to occur may lead to mistaken conclusions. At present there is no doubt that non-resident deaths from typhoid constitute an important problem in a number of localities. So far as information is afforded us, we have indicated in table 9 those cities in which one third or more of the typhoid deaths in 1932 occurred in nonresidents.¹ Perhaps some day it may be possible to obtain the yet more important information as to the locality where the typhoid infection was contracted, although under present conditions, even in New York City, less than half the cases can be traced to their source.

So far as we have been able to ascertain, tables 1-8 contain rates for all the years since 1906 for which typhoid deaths are available in the records of the health departments of the respective cities. Certain of the five-year averages for the individual cities are based on figures for less than five of the years indicated. These irregularities have heretofore been marked by footnotes

The preceding articles were published in THE JOURNAL, May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777; April 5, 1919, p. 997; March 6, 1920, p. 672; March 26, 1921, p. 860; March 25, 1922, p. 890; March 10, 1923, p. 691; Feb. 2, 1924, p. 389; March 14, 1925, p. 813; March 27, 1926, p. 948; April 9, 1927, p. 1148; May 19, 1928, p. 1624; May 18, 1929, p. 1674; May 17, 1930, p. 1574; May 9, 1931, p. 1576, and April 30, 1932, p. 1550.

1. The problem of the nonresident in typhoid statistics is discussed more at length in the previous report (J. A. M. A. 98:1550 [April 30] 1932).

giving the missing years for each city. To clarify the tables, the specific footnotes are replaced in the present report (and the practice will probably be continued in the future) by the simple note, "Incomplete data." The years which are included in the five-year averages, but for which typhoid mortality data are lacking, are as follows: Akron, 1906, 1907, 1908; Chattanooga, 1911,

TABLE 1.—*Death Rates of Fourteen Cities in New England States from Typhoid per Hundred Thousand of Population*

	1932	1931	1930	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Bridgeport.....	0.0	0.7	0.0	0.5	2.2	4.8	5.0	10.3
Fall River.....	0.0*	0.0	2.6	2.2	2.3	8.5	13.4	13.5
Lynn.....	0.0	0.0	1.0	1.5	1.6	3.9	7.2	14.1
New Bedford.....	0.0*	1.8	2.7	1.5	1.7	6.0	15.0	16.1
Somerville.....	0.0	0.0	1.9	1.3	1.6	2.8	7.9	12.1
Waterbury.....	0.0	0.0	1.0	1.2	1.0	8.0	18.8	....
Boston.....	0.5	0.9	0.8	1.2	2.2	2.5	9.0	16.0
Hartford.....	0.6	3.6	2.4	1.3	2.5	6.0	15.0	19.0
Providence.....	0.8	1.6	2.0	1.3	1.8	3.8	8.7	21.5
New Haven.....	1.2	1.2	0.0	0.6	4.4	6.8	18.2	30.8
Worcester.....	1.5	0.5	0.0	1.0	2.3	3.5	5.0	11.8
Cambridge.....	1.7	0.0	0.9	2.1	4.3	2.5	4.0	9.8
Springfield.....	1.9	2.6	0.7	0.4	2.0	4.4	17.6	19.9
Lowell.....	2.0*	1.0	5.0	2.6	2.4	5.2	10.2	13.9

* Rate computed from population as of April 1, 1930, as no estimate for July 1, 1932, was made by the Census Bureau.

1912, 1913; Fort Worth, 1918, 1919; Houston, 1906, 1907, 1908, 1909; Kansas City, Kan., 1906, 1907; Knoxville, 1916, 1917, 1918, 1919; Long Beach, 1921; Oklahoma City, 1926; Peoria, 1907, 1908 and the first four months of 1909; Tampa, 1916; Tulsa, 1921, 1922; Utica, 1921, 1922, 1923, 1924; Wilmington, 1913, 1917, 1918, 1919, 1920.

TABLE 2.—*Death Rates of Eighteen Cities in Middle Atlantic States from Typhoid per Hundred Thousand of Population*

	1932	1931	1930	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Elizabeth.....	0.0	4.3	4.4	1.6	2.4	3.3	8.0	16.6
Rochester.....	0.3	0.9	1.8	1.7	2.1	2.9	9.6	12.8
Syracuse.....	0.5	0.5	0.3	0.8	2.3	7.7	12.3	15.6
Jersey City.....	0.6	0.3	0.3	0.9	2.7	4.5	7.2	12.6
Paterson.....	0.7	2.9	0.0	1.0	3.3	4.1	9.1	19.3
Yonkers.....	0.7	1.4	0.7	0.5	1.7	4.8	5.0	10.3
Albany.....	0.8	2.3	0.8	1.8	5.6	8.0	18.6	17.4
New York.....	0.8	1.1	0.9	1.3	2.6	3.2	8.0	13.5
Trenton.....	0.8	1.6	2.4	2.1	8.2	8.6	22.3	25.1
Newark.....	0.9	0.2	0.2	0.9	2.3	3.3	6.8	14.6
Reading.....	0.9	0.0	0.9	1.6	6.0	10.0	31.9	42.0
Buffalo.....	1.2	0.7	1.9	2.7	3.9	8.1	15.4	22.8
Philadelphia.....	1.3	0.9	0.9	1.1	2.2	4.9	11.2	41.7
Pittsburgh.....	1.3	1.2	1.5	2.4	3.9	7.7	15.9	65.0
Scranton.....	1.4*	2.1	1.4	1.8	2.4	3.8	9.3	31.5
Erie.....	1.7	0.8	0.9	0.9	2.3	6.9	49.0	46.6
Utica.....	1.9	0.0	0.0	1.1	3.9†	...	...	...
Camden.....	2.5	4.2	4.2	4.4	5.9	4.9	4.5	4.0

* Typhoid deaths for Scranton furnished by Pennsylvania Department of Health, Harrisburg.
† Incomplete data.

In the large New England cities, typhoid is rapidly becoming an almost negligible disease (table 1). Six cities in this group (Bridgeport, Fall River, Lynn, New Bedford, Somerville and Waterbury), with an aggregate population of 686,271, reported not a single death from typhoid during 1932, four of these having clean slates for two years in succession. Boston records the lowest typhoid rate in its history (0.5), less than half its average for the period 1926-1930. Springfield, which ranked best among the New England cities in the latest five-year average, apparently did not do so well in 1931 and 1932. Is there a small typhoid focus (a carrier?) in or about Springfield? Lowell, which showed no improvement in 1926-1930 over 1921-1925, has done no better in 1930-1932.

The typhoid rate for the New England group as a whole reaches a new low point and is equaled only by the cities of the East North Central states (table 4).

The cities in the Middle Atlantic states, for the most part, bettered their excellent record of 1931 (table 2). The city of Elizabeth, which heads the list with a complete freedom from typhoid mortality, also reports the entire absence of typhoid cases within its borders. This is a marked improvement over the two preceding years. New York City again registered a very low typhoid rate. Camden, although showing some improvement, once more brings up at the foot of the list.

The cities in the South Atlantic group (table 3) show the largest proportional reduction in 1932 of any geographic division. Only one of the nine cities (Richmond) had even a slight typhoid increase over the preceding year. Baltimore's typhoid drops to a new low point and compares favorably with that of any other city of its size in the country. Washington, Norfolk and Atlanta also record notable improvement. The

TABLE 3.—*Death Rates of Nine Cities in South Atlantic States from Typhoid per Hundred Thousand of Population*

	1932	1931	1930	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Baltimore.....	0.6	3.1	3.3	3.2	4.0	11.8	23.7	35.1
Norfolk.....	0.8*	5.4	3.8	2.2	2.8	8.8	21.7	42.1
Wilmington.....	0.9*	1.9	4.7	3.1	4.7	25.8†	23.2†	34.0
Washington.....	1.4	3.9	3.3	2.8	5.4	9.5	17.2	36.7
Miami.....	1.8	1.8	1.8	3.5	...	...	...	...
Richmond.....	2.7	1.6	2.2	1.9	5.7	9.7	15.7	34.0
Jacksonville.....	2.8	3.0	0.0	4.4	...	...	...	...
Tampa.....	2.8	3.8	3.0	3.8	19.1	43.9†	...	...
Atlanta.....	6.8	12.6	10.3	11.1	14.5	14.2	31.4	53.4

* Rate computed from population as of April 1, 1930, as no estimate for July 1, 1932, was made by the Census Bureau.
† Incomplete data.

strides in typhoid elimination taken by this group of cities in the past few years offer a conclusive answer to those sanitarians who, not so very long ago, were maintaining that typhoid must inevitably remain relatively high in a warm climate. In 1932 Baltimore ranks comfortably alongside Boston, a really great achievement in public health.

TABLE 4.—*Death Rates of Eighteen Cities in East North Central States from Typhoid per Hundred Thousand of Population*

	1932	1931	1930	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Grand Rapids.....	0.0	1.2	0.6	1.0	1.9	9.1	25.5	29.7
Milwaukee.....	0.0	0.5	0.3	0.8	1.6	6.5	13.6	27.0
South Bend.....	0.0	0.0	0.0	...	...	...	...	...
Cleveland.....	0.2	3.4	1.5	1.0	2.0	4.0	10.0	15.7
Akron.....	0.4	1.5	1.2	1.5	2.4	10.6	21.0	27.7†
Chicago.....	0.4	0.4	0.6	0.6	1.4	2.4	8.2	15.8
Detroit.....	0.5	0.7	1.1	1.3	4.1	8.1	15.4	22.8
Toledo.....	0.7	2.0	2.1	3.0	5.8	10.6	31.4	37.5
Canton.....	0.9	1.9	1.9	1.4	3.3	8.9	...	...
Dayton.....	1.0	0.4	0.5	1.9	3.3	9.3	14.8	22.5
Youngstown.....	1.1	1.7	2.3	1.1	7.2	19.2	29.5	35.1
Indianapolis.....	1.6	1.6	1.9	2.7	4.6	10.3	20.5	30.4
Columbus.....	1.7	2.4	2.7	2.1	2.5	7.1	15.8	40.9
Flint.....	1.8	0.0	0.6	1.6	4.6	22.7	18.8	46.9
Peoria.....	1.8	1.8	0.0	0.2	3.7	5.7	16.4	15.7†
Evansville.....	1.9	0.9	6.8	6.2	5.0	17.5	32.0	35.9
Fort Wayne.....	2.5	1.7	2.6	4.2	12.9	7.3	...	...
Cincinnati.....	3.0	0.4	2.4	2.5	3.2	3.4	7.8	30.1

† Incomplete data.

The cities of the East North Central group (table 4) continue to have the lowest typhoid average of any geographic division, although closely pressed by the New England cities. Milwaukee is, we believe, the largest city in the country to get through a calendar year without a single death from typhoid, and South Bend is apparently the first city to have a perfect

typhoid record over a period of three consecutive years. The reason for the contrast between South Bend and Fort Wayne might bear looking into. The three most populous cities in this group, Chicago, Cleveland and Detroit, make remarkable records.

The cities of the East South Central group (table 5), although the lowest population aggregate, have the

TABLE 5.—*Death Rates of Six Cities in East South Central States from Typhoid per Hundred Thousand of Population*

	1932	1931	1930	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Birmingham.....	2.5	3.0	4.6	8.0	10.8	31.5	41.3	41.7
Louisville.....	2.9	2.6	1.6	3.7	4.9	9.7	19.7	52.7
Nashville.....	7.6	3.2	12.3	18.2	17.8	20.7	40.2	61.2
Chattanooga.....	8.0	1.6	0.8	8.0	18.6	27.2	35.8†	....
Knoxville.....	8.9	7.3	1.9	10.7	20.8	25.3†	....	....
Memphis.....	11.4	7.3	4.7	9.3	18.9	27.7	42.5	35.3

† Incomplete data.

highest typhoid rate of any geographic division of the United States. This is also the only geographic division in the country to register a higher typhoid rate for 1932 than for 1931. In 1932, five of the six cities showed a more or less considerable increase over 1931. Birmingham constitutes a notable exception and registers progressive improvement since 1929. The city of Chattanooga is one of the few places in the country in which the 1932 rate might be said to be of almost epidemic proportion compared with the year immediately preceding. The city of Memphis, in this group, occupies the unenviable position of leading all the American cities in typhoid mortality in 1932. The cities of the East South Central states may well take heart

TABLE 6.—*Death Rates of Nine Cities in West North Central States from Typhoid per Hundred Thousand of Population*

	1932	1931	1930	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Des Moines.....	0.0	0.0	1.4	2.4	2.2	6.4	15.9	23.7
Kansas City, Kan.....	0.0	1.6	0.0	1.7	5.0	9.4	31.1	74.5†
St. Paul.....	0.7	1.1	0.7	1.4	3.4	3.1	9.2	12.8
Minneapolis.....	0.8	0.6	1.3	0.8	1.9	5.0	10.6	32.1
Duluth.....	1.0	1.0	2.0	1.1	1.7	4.4	19.8	45.5
St. Louis.....	1.2	2.0	2.5	2.1	3.9	6.5	12.1	14.7
Kansas City, Mo.....	1.4	1.5	2.2	2.8	5.7	10.6	16.2	35.6
Omaha.....	1.4	1.8	0.9	1.3	3.3	5.7	14.9	40.7
Wichita.....	1.7	0.0	1.8	1.2	6.3	....	....	....

† Incomplete data.

from what has been accomplished in the South Atlantic states. What Baltimore and Washington have achieved, Nashville and Memphis may well look forward to. The conspicuous position of this section of the country in respect to typhoid mortality can hardly be a matter of weather, poverty or unpreventable accident.

The nine cities of the West North Central states (table 6) once more break their own excellent group record. Des Moines has a perfect score for two years running and no city in the group reports a rate as high as 2 per hundred thousand of population. The low rate in St. Louis is worthy of special mention. It seems almost incredible that Kansas City, Kan., which had an average mortality rate of 74.5 for 1906-1910, should have no deaths at all from typhoid only twenty-five years later, in 1932. Duluth and Omaha have also shown remarkable improvement.

Several of the cities in the West South Central states (table 7) show improved typhoid rates for 1932 as compared with 1931, so that the group average is definitely lower. The rate for this group of cities is, how-

ever, still far too high. The actual number of typhoid deaths (102) for the population of not quite two million (1,961,700) is nearly double that for the South Atlantic group (53) with a population considerably greater (2,375,507), and the rate is more than seven times as great as that for the New England and East North Central cities. The record of the city of Tulsa for the past three years stands out a shining exception to that of the other cities of this division. New Orleans is evidently finding it a hard job to reduce its typhoid materially.

The city of Dallas, in a detailed epidemiologic study, reports that nearly a third of the typhoid deaths registered in that city were those of nonresidents. Since emphasis is laid on a similar distinction by several city health officers, it seems worth while to note that we have on other occasions pointed out that typhoid is today a regional rather than a strictly municipal problem. The occurrence of typhoid cases and deaths in suburban areas just outside the political boundaries of

TABLE 7.—*Death Rates of Eight Cities in West South Central States from Typhoid per Hundred Thousand of Population*

	1932	1931	1930	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Tulsa.....	0.0	2.0	2.1	8.3	16.2†	....	....	....
Fort Worth.....	2.9	5.4	4.9	5.9	6.1	16.3†	11.9	27.8
San Antonio.....	3.6	4.2	3.9	4.6	9.3	23.3	20.5	35.9
Houston.....	3.7	3.2	3.8	4.8	7.0	14.2	38.1	49.5†
Oklahoma City.....	3.9	5.6	7.0	7.4†	....	....	....	....
El Paso.....	5.6	4.8	6.8	9.1	10.8	30.7	42.8	....
Dallas.....	7.4	7.3	6.5	7.3	11.2	17.2	....	....
New Orleans.....	8.6	13.9	6.5	0.0	11.0	17.5	20.9	35.6

† Incomplete data.

a city cannot be ignored as a factor affecting city typhoid rates. A ring of typhoid foci around a city is, of course, a menace to the health of the city itself. Polluted bathing beaches frequented by city residents must always be a matter of concern to health officials, even if not located within the city borders. Practically, if not technically, these outside sources of infection are subject to some measure of city control. Experience in other sections of the country has shown that a reduction in typhoid within a city has been followed by a lessening of the amount of typhoid in the country round about. The Dallas report also dwells on the relatively

TABLE 8.—*Death Rates of Eleven Cities in Mountain and Pacific States from Typhoid per Hundred Thousand of Population*

	1932	1931	1930	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Long Beach.....	0.0	0.0	0.7	1.1	2.1†	....	....	....
Los Angeles.....	0.6	0.7	1.5	1.5	3.0	3.6	10.7	19.0
Portland.....	0.6	1.0	1.0	2.3	3.5	4.5	10.8	23.2
San Diego.....	0.6	0.6	0.0	1.0	1.6	7.9	17.0	10.8
Denver.....	0.7	3.4	2.1	2.6	5.1	5.8	12.0	37.5
Salt Lake City.....	0.7	1.4	2.8	1.9	6.0	9.3	13.2	41.1
Oakland.....	1.0	1.0	1.0	1.2	2.0	3.8	8.7	21.5
Seattle.....	1.1	0.5	2.2	2.2	2.6	2.9	5.7	25.2
San Francisco.....	1.5	1.4	1.3	2.0	2.8	4.6	13.6	26.3
Spokane.....	1.7	0.8	1.7	2.2	4.4	4.9	17.1	50.3
Tacoma.....	1.8	0.9	0.0	1.8	3.7	2.9	10.4	19.0

† Incomplete data.

high typhoid rate in the Negro population of that city. While there is no doubt that a high proportion of Negroes in a city tends to swell the total typhoid rate, it is only necessary to point to examples like those of Baltimore and Richmond to show that this difficulty is not insurmountable. Typhoid is an environmental, not a racial, disease. There does not seem to be any real

reason why Dallas should continue to have a typhoid rate nearly twice as high as that of San Antonio.

The cities in the Mountain and Pacific states (table 8) make an excellent record, lowering the group rate to the lowest point yet reached. The two-year perfect record in Long Beach is remarkable. Denver, after an

TABLE 9.—*Death Rates from Typhoid in 1932*

Honor Roll: No Typhoid Death (Fourteen Cities)		
Bridgeport	Kansas City, Kan.	Somerville
Des Moines	Long Beach	South Bend
Elizabeth	Lynn	Tulsa
Fall River	Milwaukee	Waterbury
Grand Rapids	New Bedford	

First Rank (from 0.1 to 1.9 Deaths per Hundred Thousand, Fifty-Eight Cities)		
Cleveland.....0.2	Minneapolis.....0.5	Kansas City, Mo. 1.4†
Rochester.....0.3*	New York.....0.5	Omaha.....1.4†
Akron.....0.4	Norfolk.....0.5	Seranton.....1.4*
Chicago.....0.4	Providence.....0.5†	Washington.....1.4
Boston.....0.5	Trenton.....0.8*	San Francisco.....1.5†
Detroit.....0.5	Canton.....0.9	Worcester.....1.5
Syracuse.....0.5*	Newark.....0.9	Indianapolis.....1.5
Baltimore.....0.6†	Reading.....0.9	Cambridge.....1.6†
Hartford.....0.6*	Wilmington.....0.9	Columbus.....1.7
Jersey City.....0.6*	Dayton.....1.0†	Erie.....1.7†
Los Angeles.....0.6†	Duluth.....1.0*	Spokane.....1.7
Portland.....0.6	Oakland.....1.0†	Wichita.....1.7†
San Diego.....0.6*	Seattle.....1.1	Flint.....1.8†
Denver.....0.7	Youngstown.....1.1†	Miami.....1.8
Paterson.....0.7	Buffalo.....1.2†	Peoria.....1.8†
St. Paul.....0.7	New Haven.....1.2	Tacoma.....1.8
Salt Lake City.....0.7	St. Louis.....1.2	Evansville.....1.9
Toledo.....0.7	Philadelphia.....1.3	Springfield.....1.9*
Yonkers.....0.7	Pittsburgh.....1.3†	Utica.....1.9†
Albany.....0.8*		

Second Rank (from 2.0 to 4.9, Thirteen Cities)		
Lowell.....2.0	Jacksonville.....2.5†	Cincinnati.....3.0†
Birmingham.....2.5†	Tampa.....2.5	San Antonio.....3.0†
Camden.....2.5†	Fort Worth.....2.9	Houston.....3.7†
Fort Wayne.....2.5	Louisville.....2.9	Oklahoma City.....3.9
Richmond.....2.7		

Third Rank (from 5.0 to 9.9, Seven Cities)		
El Paso.....5.6†	Nashville.....7.5†	New Orleans.....8.6
Dallas.....7.4	Chattanooga.....8.0	Atlanta.....8.8
	Knoxville.....8.0†	

Fourth Rank (10.0 and Over)		
	Memphis.....11.4†	

* All the typhoid deaths reported were stated to be in nonresidents.

† One third or more of the reported typhoid deaths were stated to be in nonresidents.

aberration in 1931, is again in line with the other cities of the group. It seems to be true that typhoid is fast disappearing in this section of the country.

The total typhoid rate for the seventy-eight cities in our survey (table 11) is the lowest ever recorded (1.24) and makes a gratifying decrease over the three preceding years. As many as fourteen cities registered

TABLE 10.—*Number of Cities with Various Typhoid Death Rates*

	No. of Cities	10.0 and Over	5.0 to 9.9	2.0 to 4.9	1.0 to 1.9	0.1 to 0.9	0.0
1916-1910.....	77	75	2	0	0	0	0
1911-1915.....	79	58	19	2	0	0	0
1916-1920.....	84	22	32	30	0	0	0
1921-1925.....	89	12	17	45	12	0	0
1926-1930.....	92	3	10	30	37	12	0
1931.....	91	9	13	25	20	15	6
1932.....	92	6	10	25	27	13	6
1927.....	92	5	9	20	22	17	10
1928.....	92	5	9	21	27	25	8
1929.....	92	5	9	21	27	22	10
1930.....	93	5	6	23	28	27	12
1931.....	93	5	6	23	28	27	12
1932.....	93	1	7	13	29	29	14

entire freedom from typhoid deaths for the calendar year 1932, an unprecedented record. The practically complete eradication of typhoid over wide areas of the United States seems a goal worth striving for.

The low typhoid record of American cities in 1932 is worth special notice, since in the autumn disquieting reports were current about the exacerbation of the

infection. In August the prevalence of typhoid in Illinois was said to be higher than at that time of year for more than a decade. A statement published by *Science Service*, Washington, D. C., reported (Aug. 19) that "typhoid fever is increasing all over the nation" and suggested that this condition might be "due to certain laxity in sanitary procedure." Whatever the case as regards rural communities and the smaller cities, it is evident, now that the returns are all in, that the larger cities of the United States experienced no increase in typhoid mortality in 1932 but, instead, a substantial reduction.

TABLE 11.—*Total Typhoid Rate for Seventy-Eight Cities, 1910-1932**

	Population	Typhoid Deaths	Typhoid Death Rate per 100,000
1910.....	22,573,435	4,637	20.54
1911.....	22,211,341	3,950	17.02
1912.....	22,835,399	3,132	13.14
1913.....	24,457,989	3,285	13.43
1914.....	25,091,112	2,781	11.03
1915.....	25,713,346	2,494	9.47
1916.....	26,257,550	2,191	8.34
1917.....	26,865,408	2,016	7.50
1918.....	27,056,696†	1,824†	6.73
1919.....	27,735,083†	1,151†	4.15
1920.....	28,244,878	1,088	3.85
1921.....	28,559,002	1,141	3.95
1922.....	29,473,246	963	3.26
1923.....	30,087,490	950	3.16
1924.....	30,701,034	943	3.07
1925.....	31,315,598	1,079	3.44
1926.....	31,929,782	907	2.84
1927.....	32,543,066	648	1.99
1928.....	33,158,150	628	1.89
1929.....	33,772,834	537	1.59
1930.....	34,386,717	554	1.61
1931.....	35,137,015	553	1.60
1932.....	35,691,815	442	1.24†

* The following fifteen cities are omitted from this table because data for the full period are not available: Canton, Chattanooga, Dallas, Fort Wayne, Jacksonville, Knoxville, Long Beach, Miami, Oklahoma City, South Bend, Tampa, Tulsa, Utica, Wichita, Wilmington.

† Data for Fort Worth lacking.

‡ The rate for the ninety-three cities in 1932 is 1.34 (total population, 37,753,512; typhoid deaths, 508), whereas in 1930 the corresponding rate was 1.64, and in 1931, 1.63.

It is to be hoped that the achievements of public health workers in combating typhoid in the United States will receive the attention from publicists that they deserve. The unceasing vigilance that has been

TABLE 12.—*Total Typhoid Death Rate per Hundred Thousand of Population for Ninety-Three Cities According to Geographic Divisions*

	1932 Population	Typhoid Deaths		Typhoid Death Rates			
		1932	1931	1932	1931	1930	1925
New England.....	2,631,505	19	28	0.72	1.07	1.31	2.48
Middle Atlantic.....	13,028,300	126	137	0.97	1.06	1.40	2.97
South Atlantic.....	2,375,507	53	101	2.23	4.29	4.60	7.01*
East North Central.....	9,759,600	68	96	0.70	1.00	1.29†	2.33†
East South Central.....	1,242,500	77	50	6.20	4.09	8.31	13.00
West North Central.....	2,720,700	28	36	1.03	1.34	1.33	3.41
West South Central.....	1,961,700	162	193	8.20	6.97	7.32†	13.08†
Mountain and Pacific	4,023,700	35	42	0.87	1.07	1.80	2.33

* Lacks data for Jacksonville and Miami.

† Data for South Bend for 1925-1929 are not available.

‡ Lacks data for Oklahoma City in 1926.

§ Lacks data for Oklahoma City.

necessary to prevent the increase of typhoid in some localities and to bring about an actual reduction in others can hardly be realized by those not concerned with the details of public health administration. In these days of slipping appropriations and curtailed personnel, it is no small triumph for the health officers of this country that they not only have prevented an increase of typhoid but also have actually brought about a considerable reduction. Civilized standards of disease prevention give no indication of being undermined.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION
OF THE FOLLOWING ARTICLE.

H. A. CARTER, Secretary.

EVALUATION OF METHODS USED IN PHYSICAL THERAPY

HOWARD T. KARSNER, M.D.

AND

HARRY GOLDBLATT, M.D.

CLEVELAND

In the final analysis, the success or failure of any form of therapy or therapeutic agent in human medicine is gaged by its action on living patients. The evaluation of the treatment is not to be measured by the opinions of the physician but rather by the facts he can demonstrate. It is often observed that any new form of treatment which may be suggested is regarded as valuable by groups of physicians and individual patients who try it. This means that in both instances there is a psychologic factor of significant proportions. Such success as may be attained in this manner is often a manifestation of psychotherapy, involuntary in nature, rather than of actual physiologic activity of the treatment employed. Capacity for management of the psyche should be in the armamentarium of all physicians, in addition to having at his command all those drugs and physical therapeutic agents that can be proved to be of real value. It is our purpose in this paper to explain how the various devices and methods of physical therapy may be rationally evaluated. This evaluation must take into consideration the investigator, the matter to be investigated and the manner of the investigation.

The investigator is not merely a personality or a person. He must be one who by training, experience, initiative, imagination, controlled curiosity and intellectual honesty is qualified to undertake an objective examination of the matter in hand without preconceived ideas or prejudice. He must attack the problem calmly, deliberately, with a clear program based on well conceived hypothesis, and be thoroughly familiar with the work of others along the same and similar lines. This plan excludes at once the charlatan. More important, it excludes those who commonly report on the value of a form of treatment or therapeutic agent without having adequate knowledge of the method or substance employed, without supplying adequate proof of the accuracy of their diagnosis of the condition treated, and without affording a scientifically established demonstration of the value and accuracy of their conclusions by a comparison with control tests wisely chosen and properly performed.

In physical therapy it is not uncommon to find that the condition to be treated is not a well defined disease with established cause, characteristic course and clear cut pathologic alterations of form or function. When this is true, the biologic variations in manifestation are so wide that the investigation must cover an extremely large number of cases, both treated and controls, much greater than is necessary when the disturbance is in the form of a definite disease entity with a well established natural history and course.

For example, compare the treatment of some of the vague muscle and joint conditions showing no out-

ward signs of disease, and pain the only symptom, with the treatment of a fracture similarly attended by pain. In the former case there is no objective way of determining improvement and it is difficult to know whether it is due to the physical or psychic effect of the treatment or simply a natural variation of the symptoms. In the latter case the changes following certain types of treatment can be determined objectively by various methods, and a better evaluation of the effects of the therapy can be made.

Physical therapy employs a variety of physical agents: massage, therapeutic exercise, water, air, radiations (heat, light, ultraviolet, x-rays, radium), vibrations (mechanical, sound) and electricity of various forms. All applied science is built on a groundwork of pure science, and in the same manner all the appliances of use in physical therapy have a background of knowledge in pure physics. Furthermore, rational therapeutics has at its call a certain volume of knowledge of the physiologic effects of the agents employed. Thus it is known that the physical agents just enumerated may cause certain physiologic and pathologic reactions.

The information available about these effects is much less than is true of a number of chemical substances used as drugs. For the furtherance of physical therapy it is necessary that a much larger bulk of concrete and exact information be built up than is now available. These basic facts are to be furnished chiefly by the biologist, the physiologist, the biophysicist, the chemist and the pathologist. Funds must be made available so that these potential sources of information may be activated to further and more intensive study of the fundamental action of the various physical agents. For example, it is known that, within certain ranges of wavelength, ultraviolet radiation activates ergosterol in the living animal and in the test tube so that an active antirachitic substance is formed. The exact process that takes place is not clearly established. Whether it is necessary for the rays to be used in such quantity as to cause erythema in order that this chemical or physical change may take place, and what part, if any, erythema does play in the process, are all problems. What effects these rays may have directly on cells and tissues, their form and their function, require further study. It is not known exactly how activated ergosterol influences the metabolism of calcium and phosphorus to correct the changes incident to rickets. In the field of physical therapy it can only be said that ultraviolet rays prevent and cure rickets and favor the development of sound teeth and bones. Even this last phase is not incontrovertibly established; it is rather a strong presumption.

This general statement does not mean that ultraviolet rays may not have other beneficial effects nor that they have no potentialities of harm. It does mean, however, that precise information as to these other possibilities has not yet been obtained. The problems still to be solved in the fields of practice with these rays need further researches in the physics of the rays, the physiologic actions of the rays as well as the study of the rays in clinical practice. What has been said about the ultraviolet rays is applicable not only to the shorter rays of the spectrum (x-rays, grenz rays, radium) but also to the longer rays (visible, infra-red) of the spectrum. The problems are innumerable. The physiologic effects of hydrotherapy are imperfectly known and this form of treatment, excellent though it be, is largely empirical and either entirely dependent on or intimately bound up

with the effects of heat. The same is true of air. Our knowledge of the exact effects and mode of action of active and passive motion, massage and rest is also incomplete. Fortunately, most of the agents are not dangerous and may be employed in human medicine without risk to the subjects of the experiment. In the case of some physical agents (e. g., ultraviolet rays) an indirect way of testing the effect on human beings or animals is possible. This is accomplished by the irradiation and activation of a substance (ergosterol), which is then administered. However, the latter in all likelihood does not act by giving off secondary ultraviolet rays to the body but rather more likely by means of other physical and chemical properties imparted by the rays to the previously inactive substance.

The study of the effects of physical therapy is of necessity largely, or partly, an experiment conducted on human beings. This experiment must be set up with all the deliberation and forethought of experiments in any line of scientific work. The evaluation of the effects of various physical agents in the treatment of certain skin diseases is not difficult, because it can be determined objectively. However, it is very difficult in the case of ill defined ailments which do not afford objective criteria for the determination of diagnosis and effect of treatment. As mentioned before, there is in human experimentation the psychic factor, which is of little and usually no significance in animal experiments. As Sollmann has said, such an experiment may utilize two methods, the first of which is the statistical and the second the comparative or blind test. In the statistical method, "alternate patients receive or do not receive the treatment." Owing to the individual variations and psychic factors, this requires an extremely large number of observations.

In the comparative or blind test, one series of patients is treated with the agent under consideration and another is treated similarly but with inactive agents, masked in such a way as to be indistinguishable both by the patient and by the experimenter. In the case of drugs, this is easily effected. In the case of some forms of physical therapy it can also be accomplished. Thus, as regards ultraviolet radiation, for example, one series of patients might be treated with rays that are unscreened or that have passed through permeable glass, and the other series with rays that have passed through glass impermeable to the ultraviolet portion of the spectrum. The latter method is often more desirable when direct treatment is being investigated. In the case of many physical agents, however, the masking of nonactive treatment and even any form of nonactive treatment is not possible. Yet, whenever practicable, it is, generally speaking, the more desirable method because it avoids favorably or unfavorably prejudiced opinions of the observer, whether those opinions are conscious or subconscious.

Owing to the limitations of this method in physical therapy, it will be necessary in many instances to fall back on the statistical method. Since this does permit of opinions on the part of the observers, the number of observations must be multiplied so as to decrease this particular factor of error. This error can be practically eliminated by objective evaluation of the effects without knowledge of the type of treatment used. Thus, one experimenter gives the treatment and another makes the observations on the patients without knowledge as to which have and which have not been treated. Strange to say, this critical part of the statistical method is

rarely practiced in investigations on patients but is commonly used in experiments carried out on animals. It is the only method that is likely to lead to logical, sound and probably correct conclusions.

The main essential of any experiment in therapy is that observations with the particular form of treatment must be controlled and checked in a series of patients without the treatment. The number of observations must be so large as to minimize some of the disadvantages of random sampling. If the person who conducts the experiment is to know the nature of the method employed in each case, he must put personal opinions into the background and make his observations as objective as is humanly possible. Much can be learned from objective tests on animals, but the final test of the effects and value of all therapeutic measures designed for human beings is on the human patient and this is no less true of physical therapy than of drug therapy. The art of medicine is an essential superstructure built on the foundation of medical science, and neither the whole edifice nor any of its parts can have any escape from the inexorable laws of scientific evidence.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

ANAEROBIC ANTITOXIN (See New and Nonofficial Remedies, 1933, p. 359).

The Cutter Laboratory, Berkeley, Calif.

Polynacrobic Antitoxin, Prophylactic (Tetanus-Gas Gangrene Antitoxin).—An antitoxic serum prepared by immunizing horses with the toxins of *B. tetani*, *B. welchii*, *Vibrio septique*, *B. sordellii* and *B. oedematiens*. The animals are usually immunized with individual toxins and the resulting antisera are mixed in proper proportions and concentrated by a modified Banzhaf method. The unitage of the tetanus antitoxin and of the Welch bacillus antitoxin is determined according to the method prescribed by the National Institute of Health. *Vibrio septique* antitoxin is standardized in terms of a nonofficial unit which is the amount of antitoxin required to protect a kilogram of rabbit against one minimal lethal dose of *Vibrio septique* toxin. *B. oedematiens* and *B. sordellii* antitoxins are standardized by determining the number of guinea-pig minimal lethal doses of each toxin against which the unit volume of the antitoxin will protect.

The product is marketed in syringes containing 1,500 units of Tetanus antitoxin, 1,000 units of *B. welchii* antitoxin, 1,000 units of *Vibrio septique* antitoxin, and sufficient antitoxin to neutralize at least 5,000 guinea-pig minimal lethal doses of *B. oedematiens* and *B. sordellii* toxin.

Dosage.—The usual prophylactic dose is the contents of one syringe. Cases in which considerable time has elapsed since the injury or in which the wound is particularly liable to severe infection may require a larger initial dose. In those cases in which the wound is badly lacerated, or which are badly soiled, the dose should be repeated in seven days.

Polynacrobic Antitoxin, Therapeutic (Gas Gangrene Antitoxin).—An antitoxic serum prepared by immunizing horses with the toxins of *B. welchii*, *Vibrio septique*, *B. oedematiens* and *B. sordellii*. The animals are usually immunized with individual toxins and the resulting antisera are mixed in proper proportions and concentrated by a modified Banzhaf method. *Vibrio septique* antitoxin is standardized in terms of a nonofficial unit which is the amount of antitoxin required to protect a kilogram of rabbit against one minimal lethal dose of *Vibrio septique* toxin. *B. oedematiens* and *B. sordellii* antitoxins are standardized by determining the number of guinea-pig minimal lethal doses of each toxin against which the unit volume of the antitoxin will protect.

The product is marketed in bottles containing 10,000 units of *B. welchii* antitoxin, 10,000 units of *Vibrio septique* antitoxin, and enough *B. oedematiens* and *B. sordellii* antitoxins to neutralize 50,000 or more guinea-pig minimal lethal doses of their respective toxins.

Dosage.—The initial therapeutic dose is the contents of one bottle, repeated at intervals of from six to twelve hours as required. In the early stages of treatment the antitoxin should be given intravenously if possible.

NEODIARSENOL (See New and Nonofficial Remedies, 1933, p. 73).

The following dosage forms have been accepted:

Neodiarсенol, 1.5 Gm. Ampoules.
Neodiarсенol, 3 Gm. Ampoules.
Neodiarсенol, 4.5 Gm. Ampoules.

THE MILWAUKEE SESSION

AMERICAN MEDICAL ASSOCIATION, EIGHTY-FOURTH ANNUAL SESSION

MILWAUKEE, WIS., JUNE 12-16, 1933

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The eighty-fourth annual session of the American Medical Association will be held in Milwaukee, June 12-16, 1933.

The House of Delegates will convene at 10 a. m., Monday, June 12. In the House the representation of the various constituent associations for 1932, 1933 and 1934 is as follows:

Alabama	3	New Hampshire	1
Arizona	1	New Jersey	4
Arkansas	2	New Mexico	1
California	7	New York	17
Colorado	2	North Carolina	3
Connecticut	2	North Dakota	1
Delaware	1	Ohio	7
District of Columbia	2	Oklahoma	3
Florida	3	Oregon	1
Georgia	1	Pennsylvania	10
Idaho	1	Rhode Island	1
Illinois	10	South Carolina	2
Indiana	4	South Dakota	1
Iowa	3	Tennessee	3
Kansas	2	Texas	5
Kentucky	3	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	6	West Virginia	2
Michigan	5	Wisconsin	3
Minnesota	3	Wyoming	1
Mississippi	2	Alaska	1
Missouri	5	Hawaii	1
Montana	1	Isthmian Canal Zone	1
Nebraska	2	Philippine Islands	1
Nevada	1	Puerto Rico	1

The fifteen scientific sections of the American Medical Association, the Medical Corps of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The Scientific Assembly of the Association will open with the general meeting to be held at 8 p. m., Tuesday, June 13. The sections will meet Wednesday, Thursday and Friday, June 14, 15 and 16, as follows:

CONVENING AT 9 A. M., THE SECTIONS ON

Practice of Medicine.	Pathology and Physiology.
Obstetrics, Gynecology and Abdominal Surgery.	Preventive and Industrial Medicine and Public Health.
Laryngology, Otology and Rhinology.	Urology.
Miscellaneous Topics.	Orthopedic Surgery.
	Sessions on Anesthesia

CONVENING AT 2 P. M., THE SECTIONS ON

Surgery, General and Abdominal.	Nervous and Mental Diseases.
Ophthalmology.	Dermatology and Syphilology.
Pediatrics.	Gastro-Enterology and Proctology.
Pharmacology and Therapeutics.	Radiology

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., Monday, Tuesday, Wednesday and Thursday, June 12, 13, 14 and 15, and from 8:30 a. m. to 12 noon, Friday, June 16.

EDWARD H. CARY, President.
F. C. WARNSHUIS, Speaker, House of Delegates.
OLIN WEST, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover members of the House of Delegates and of the newly elected members who have been reported to the Secretary in time to be included:

STATE DELEGATES

ALABAMA J. N. Baker, Montgomery. R. S. Hill, Montgomery. C. A. Grote, Huntsville.	KENTUCKY Virgil E. Simpson, Louisville. A. T. McCormack, Louisville. Irvin Abell, Louisville.
ARIZONA D. A. Rhinehart, Little Rock.	LOUISIANA J. Q. Graves, Monroe. William H. Seemann, New Orleans.
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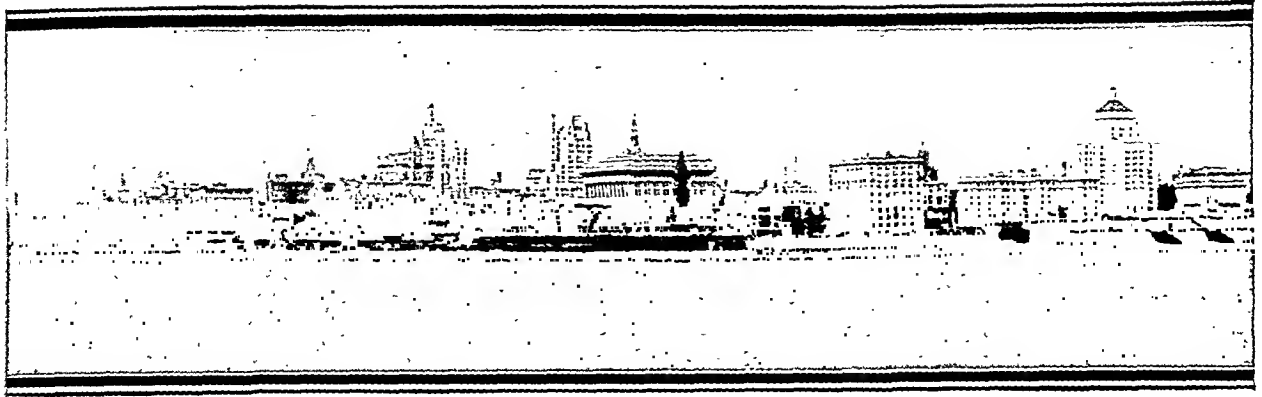
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THE SKYLINE OF MILWAUKEE

MILWAUKEE, HOSTESS TO THE 1933 CONVENTION

Milwaukee, a city that has entertained thousands of successful conventions, is planning a cordial welcome for the Annual Session of the American Medical Association, June 12 to 16.

The metropolis of Wisconsin ranks as the twelfth most populous city in the United States. It rests on the shores of Lake Michigan. Across these waters each morning the sunrise floods the city with a glowing color of cheer. An atmosphere of hospitality has given to Milwaukee an enviable reputation as a friendly city.

Some two hundred years ago, Father Marquette and Louis Joliet, on their way to the Mississippi River, passed along the west coast of Lake Michigan and on their map marked the present site of the city as Milwaukee Bay. This map is now in the possession of a convent in Montreal.

La Salle and his party are said to have stopped here on their way south in 1679, and in that year the name appears as Millioke in the Jesuit relations. The name as originally uttered by an Indian youth was "Mahn-a-waukie" which, in the Ojibwa (Wisconsin) language means "good and beautiful lands." In different dialects other Indians are known to have called this spot "Mahn-a-waukie Seepe" or "gathering place by the river."

TRADING POST IN INDIAN VILLAGE

Jacques Vieau established a trading post for the Northwestern Fur Company in Milwaukee in 1795, but the present city dates its beginning to 1818, when Solomon Juneau, a young Frenchman, purchased a small trading post from Vieau, his father-in-law in the Indian village. Before this many missionaries and fur traders had visited the village but none stayed. Under the leadership of Juneau, pioneers prospered in this growing community. They were quick to capitalize the wonderful advantages of the village's location for the development of commerce and industry.

In the middle thirties, Milwaukee suffered from an era of speculation resulting from the enthusiasm about all manner of public improvements. Roads were ordered and charters were granted to railroads. Prices went up and real estate suffered. However, such men as Solomon Juneau made good their pledges and real estate was returned to fair value.

Milwaukee East Side and Milwaukee West Side, popularly known as Juneau Town and Kilbourn Town, were separately incorporated as townships in 1837. In 1839 they united as wards of the

same village. Walker's Point, on the south side, was annexed as a third ward, and in 1846 the three were incorporated as the city of Milwaukee, of which Solomon Juneau was elected the first mayor.

The first newspaper, the *Milwaukee Advertiser*, began publication on July 14, 1836, and a public school was opened in that year.

In 1839 was established the Fire and Marine Insurance Bank, which for forty years was one of the strongest banks west of the Alleghenies. It financed the Milwaukee and other railways.

The first connection with Chicago by telegraph was established in 1849 and by railway in 1856. About 1840, a stream of immigration from Germany began, which was accelerated by the revolutionary movement in 1848 and continued through half a century.

In 1900, of a total population of 285,315, 53,854 had been born in Germany and 151,045 more had one or both parents of German birth. This made a total of 75 per cent who were either German by birth or of the first generation. The population of Milwaukee today is 600,000.

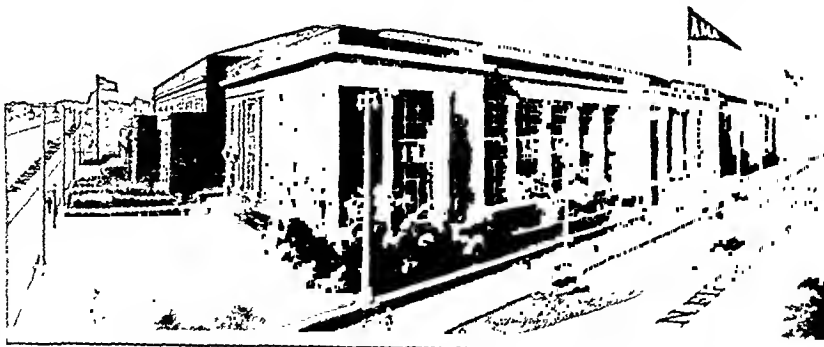
MILWAUKEE'S SETTING

While Milwaukee is one of America's greatest production and marketing centers, the natural beauty of the place has been preserved. Nature has provided a gorgeous setting for a great city. There is evidence of the appreciation of beauty in its buildings, parks and boulevards. The charm is enhanced by the Milwaukee River, which flows through the heart of the business district. Its waters teem with craft, its banks are lined with industrial plants, and its bridges are picturesque. Throughout the city are beautiful homes.

THE LEADING INDUSTRIES

Milwaukee leads the nation in the diversity of its industries. It leads all other cities in the production of more than twenty major products. The metal trades industry ranks first and the production of food products second. It is a leader in the

production of leather goods and flour milling machinery; it makes more outboard motors than any other city. It ranks third in the manufacture of boots and shoes, flavoring extracts and syrups, knit goods, motor vehicle bodies and parts, paper goods, signs and advertising, and leads in the manufacturing of sausage.



THE MILWAUKEE AUDITORIUM
Headquarters of the Annual Meeting of the American Medical Association

Milwaukee boasts of being one of the healthiest and safest cities in the United States. The health department has worked with the medical profession. In 1932, Milwaukee was awarded first place in the health conservation contest conducted by the Chamber of Commerce of the United States. Milwaukee had received this award in 1929 and was awarded second place in 1930. In the same contest for fire waste, Milwaukee was awarded first place in 1926 and 1932. Milwaukee is the only city to win both contests twice.

Milwaukee has an exceptionally low crime record, thanks to the excellent police force and to the law abiding spirit of the people. Convention visitors never fail to notice the efficiency and courtesy displayed by Milwaukee policemen.

PARKS AND DRIVES

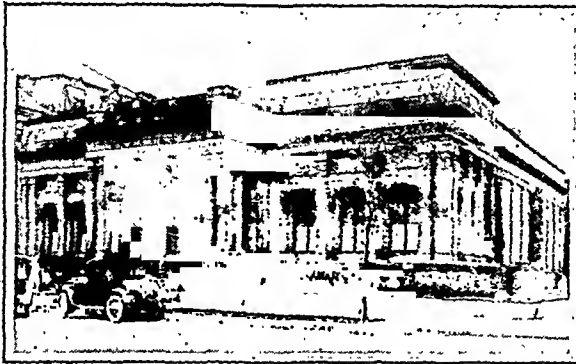
The city parks and playgrounds cover an area of more than 1,200 acres, with a variety of scenery and recreation. The city is circled by a park development plan, which follows the

The Layton Art Gallery and the Milwaukee Art Institute at North Jefferson and East Mason streets is near the New Pfister Hotel, the headquarters for the Woman's Auxiliary.

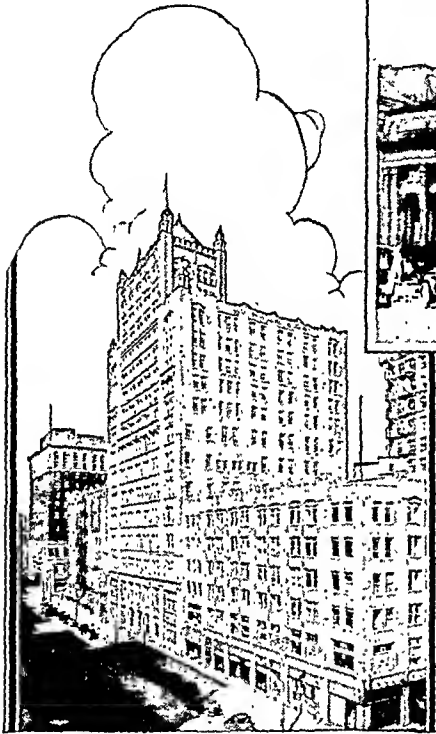
The Milwaukee Public Museum and Library jointly near Milwaukee's Court of Honor has a magnificent collection of relics and curios. It is particularly noted for its early American characterizations. Recently Dr. Samuel A. Barrett, director of the museum, returned from the African Safari, bringing with him many interesting specimens.

AIRPORTS

Milwaukee is one of the few cities that have a downtown aviation terminal with rail transfer connection. This aerial harbor is used principally by amphibians with scheduled passenger and freight service between Milwaukee and cities on the Michigan side of Lake Michigan, with direct rail or air connections to the east and west coasts. There also is a county airport with air mail and passenger service, a few



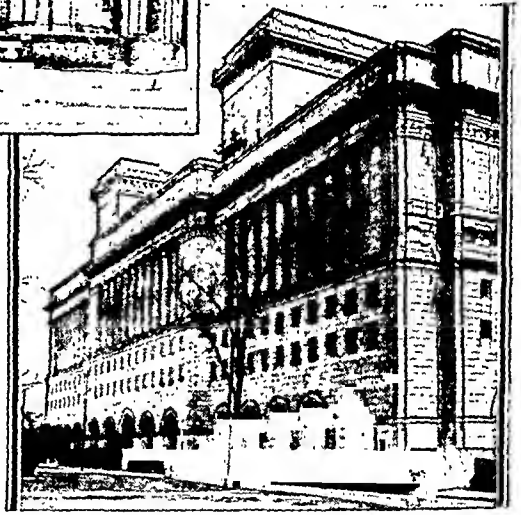
At Left—THE LAYTON ART GALLERY AND SCHOOL



THE WISCONSIN TELEPHONE COMPANY



THE CITY HALL



THE NEW MILWAUKEE COUNTY COURTHOUSE

lake shore and the course of the river. There is nothing more pleasing to convention visitors than the Lincoln Memorial Drive, which follows the shore line of Lake Michigan for six miles through a series of parks and beaches, the Milwaukee Yacht Club, the Coastguard station and the Gun Club, terminating in beautiful Lake Park which is noted for its expanse of woodland, bridle paths and golf course.

In Washington Park on the far west side is one of the largest municipally owned collection of animals in the United States. This zoo is noted for its extensive collection of both animals and birds. It is one of the very few that has been successful in raising polar bears. Recently two concrete barless bear dens were completed. Other features of the zoo are monkey island, a delight to children; goat mountain, a natural setting for the picturesque mountain goat, and Mary Lou, a trained chimpanzee.

On the south side of Milwaukee in Mitchell Park is a fine conservatory, in which are seasonal displays of the finest flowers. Visitors will long remember the sunken garden.

minutes' drive from the city, and, on the opposite side of town, a Curtiss-Wright airport.

THE AUDITORIUM

The Milwaukee Auditorium, where the convention will be held, is located in the heart of the hotel, theater and shopping district. There are seven halls with a seating capacity ranging in size from 300 to 8,240. Each hall is equipped with a stage and committee rooms and all are acoustically perfect. The Auditorium is equipped with a ventilating system which supplies conditioned air at any temperature. A modern public address system is part of the equipment of all these halls.

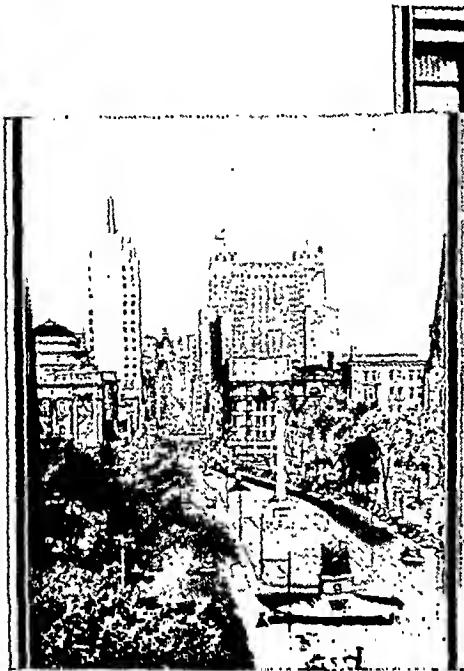
Milwaukee's location on the shores of Lake Michigan makes it ideal to enjoy a vacation combined with the convention trip. Nowhere in this country is there a more inviting vacation land than northern Wisconsin, and Milwaukee is the gateway for the famous "Land o' Lakes Region." Thousands of sparkling lakes and forests lie within a few miles of the city. Eighteen concrete paved highways lead to these noted spots.

MILWAUKEE'S HOSPITALS

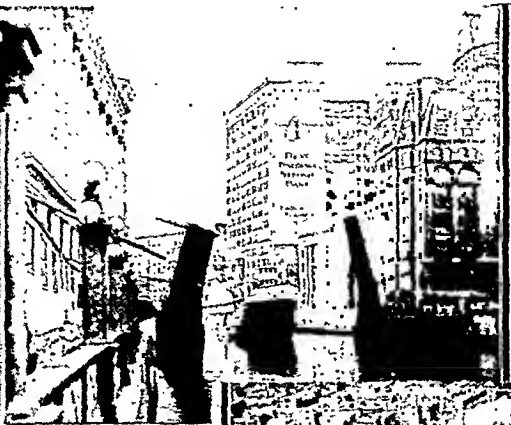
Milwaukee is proud of its health record, which has been due at least in part to the fine hospitals and other health centers. Milwaukee County maintains a group of buildings in the beautiful suburb of Wauwatosa, west of Milwaukee, which includes an asylum, a hospital for mental diseases, Muirdale Sanatorium and the Bluemound Preventorium. The well equipped County General Hospital, also located in Wauwatosa, is a model of modern architecture. The County Emergency Hospital is located on Twenty-fourth Street and Wisconsin Avenue near both the residential and the business districts. The city also has a new emergency hospital, which is located on the south side and is known as the Johnston Emergency Hospital. Thus there are two new emergency hospitals in different sections of the city. Among the other hospitals scattered throughout Milwaukee are Columbia, Deaconess,

Isolation, Maternity, Milwaukee Children's, Milwaukee, Misericordia, Mount Sinai Hospital of Milwaukee, Roger Williams, St. Anthony's, St. Camillus, St. Joseph's, St. Luke's, St. Mary's, Shorewood Hospital and West Side Hospital. Additional medical facilities are provided by the Milwaukee Sanitarium, Sacred Heart Sanitarium, and the Riverside Sanitarium. The new Marquette University Medical School and Hospital is on the Marquette University Campus on Fifteenth Street near Wisconsin Avenue. The National Home and Hospital for disabled soldiers, which houses veterans of the Civil War, Spanish-American War, World War and other campaigns, is located in West Allis, a suburb of Milwaukee.

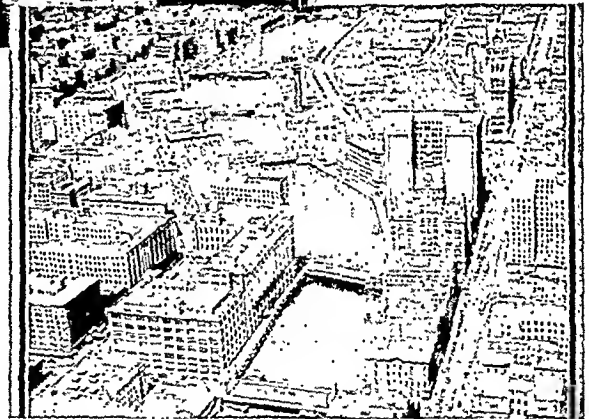
Milwaukee, the metropolis of Wisconsin, has changed much in the last decade, but the city has retained its pleasing picturesqueness, which through the years has endeared it to dweller and visitor alike. Although an industrial center, Milwaukee is a city of beautiful homes and residential districts.



COURT OF HONOR LOOKING TOWARD THE
DOWNTOWN BUSINESS DISTRICT



At Left—THE WISCONSIN
AVENUE BRIDGE OPENS
FOR A PASSENGER BOAT



AIR VIEW OF CENTRAL BUSINESS DISTRICT OF
MILWAUKEE

TRANSPORTATION

Railroad Rates to Milwaukee

Special rates have been granted for the benefit of members of the American Medical Association and dependent members of their families who will attend the annual session at Milwaukee.

The Central, the Southwestern, the Transcontinental, the Trunk Line and the Western Passenger Associations have granted a rate of one and one-third fares. The rate granted by the Eastern and Western Lines of the Canadian Passenger Association and by the New England Passenger Association is one and one-half fares.

To have the benefit of a return rate of one-third or one-half fare, as the case may be, it will be necessary for each member to secure a CERTIFICATE from the railroad ticket agent when he purchases his ticket to Milwaukee. The certificate must be certified to by the Secretary of the American Medical Association, which may be done at the Registration Bureau to be located in the Milwaukee Auditorium, and must then be validated by a representative of the railroads. When the certificate is so certified and validated, it will entitle its holder to purchase a return ticket to his home, over the same route

traveled to Milwaukee, at one-third or one-half fare as the case may be. If the ticket agent at the member's home station does not have the certificate, he will furnish information as to where it may be obtained.

The certificate is *not* a receipt for money paid for a ticket, nor will a receipt entitle its holder to secure a return trip ticket at a reduced rate. Be sure to ask the ticket agent for a CERTIFICATE.

The dates of sale of tickets to Milwaukee will be June 8 to 14 in the territory of the Eastern Lines of the Canadian Passenger Association, as well as in the territories of the Central Passenger Association and the Trunk Line Association. Dates of sale of tickets will be June 7 to 13 in the territory of the New England Passenger Association. In the territory of the Western Lines of the Canadian Passenger Association as well as in the territories of the Southwestern Passenger Association, the Transcontinental Passenger Association and the Western Passenger Association, the dates of sale of tickets from Arizona, British Columbia, California, Nevada, New Mexico, northern Idaho, Oregon, Utah and Washington will be June 4 to 13; from

Montana and southern Idaho, June 6 to 12; from Alberta, Colorado (except Julesburg), Oklahoma, Texas and Wyoming, June 7 to 13; from Arkansas, Illinois, Iowa, Kansas, Louisiana, Manitoba, Minnesota, Missouri, Nebraska, northern Michigan, North Dakota, Ontario (west of Port Arthur and Armstrong), Saskatchewan, South Dakota and Wisconsin, as well as from Julesburg, Colo., Memphis, Tenn., and Natchez, Miss., June 8 to 14.

Certificates properly certified and validated will be honored for purchasing tickets for the return journey at one-third or one-half fare, as the case may be, up to and including June 20. No refund of fare will be made on account of failure to present validated certificate when purchasing return ticket. The return ticket must be used over the same route as that traveled going to Milwaukee.

Thirty Day Limit: Fare and one-third for the round trip for tickets on sale daily May 26 to October 29, with return limit thirty days in addition to date of sale.

For the season limit and the thirty-day limit fares the same route is to be used in both directions. Stopovers at all points on either going or return trip within the final limit is permitted.

Under the arrangements of the lines east of Chicago, reduced fare tickets to Chicago for A Century of Progress Exposition will be on sale only two days of each week; namely, Tuesdays and Saturdays, during the entire period of the exposition.

Summer Excursion Fares

Summer excursion fares in the territory of the Transcontinental Passenger Association will be in effect daily from May 15 to October 15 on a basis of approximately fare and one-



MARQUETTE UNIVERSITY GROUP PRESENTING THE SCIENCE BUILDING IN THE FOREGROUND, GESU CHURCH, JOHNSTON HALL, AND THE LAW BUILDING

When you purchase your ticket to Milwaukee, secure from the railroad ticket agent a **CERTIFICATE**, which, when properly certified to and validated, will entitle you to purchase a return ticket to your home, over the same route traveled to Milwaukee, at one-third or one-half, as the case may be, the fare paid for your ticket to Milwaukee.

BE SURE TO ASK YOUR RAILROAD TICKET AGENT FOR A CERTIFICATE WHEN PURCHASING YOUR TICKET TO MILWAUKEE.

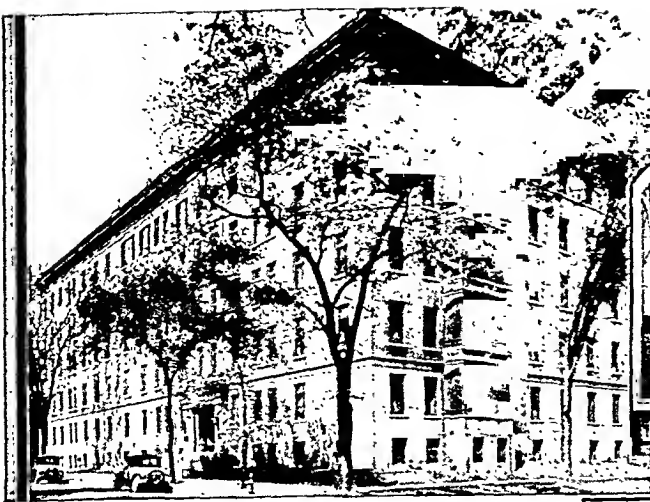
Century of Progress Exposition Fares

Members of the Western Passenger Association, operating in the territory, Utah, Southern Idaho and east, New Mexico and east to Chicago and St. Louis, have authorized the following reduced fares for the Century of Progress Exposition, the understanding being that the reduction applies in all instances to the present basis of fare:

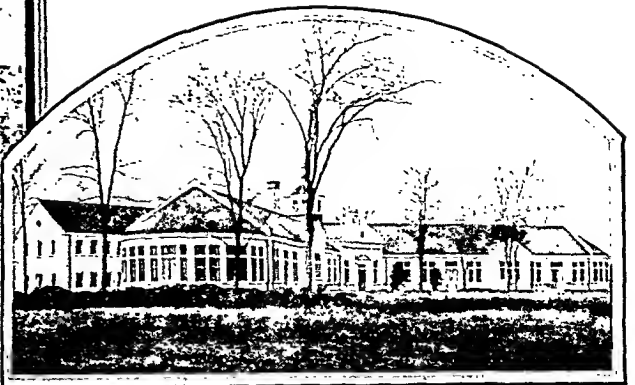
Season Limit: Fare and one-half for the round trip for tickets on sale daily May 26 to October 15, with return limit November 15.

tenth for the round trip, with return limit October 31; also on a basis of one fare plus fifty cents for the round trip, with return limit of sixteen days in addition to date of sale.

Milwaukee's Health During 1932.—In spite of the depression, Milwaukee experienced in 1932 the most healthful year in its history. The general death rate was 8.8, compared to 9.1 last year, the previous low record. Likewise, the average age at death of all persons dying during the year, 52.6, is an increase over any preceding year. Comparative figures representing this average age of death show the progress of the city toward health in a startling way: In 1880 it was 18.1 years; by 1900 it had increased to 27.6 years; in 1920 to 38.7 years until in 1932 it reached 52.6 years. This excellent showing is not because the population consists of selected groups of individuals and of single men of younger ages employed in industry, as is the case in some cities. Milwaukee is an older community with a steady population of settled families many of whom have resided in the community during their entire life.—Milwaukee's Health, Milwaukee Health Department, 1932.

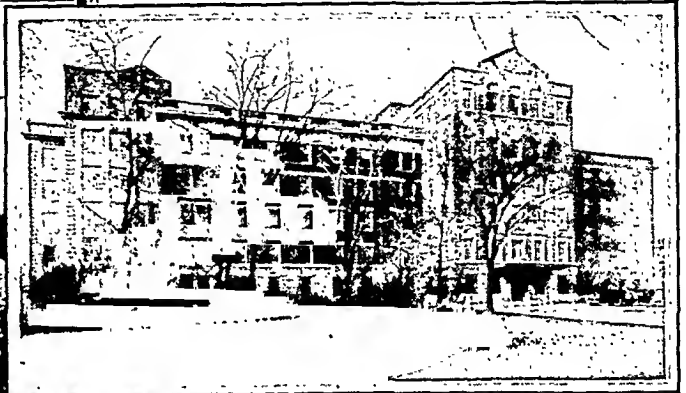
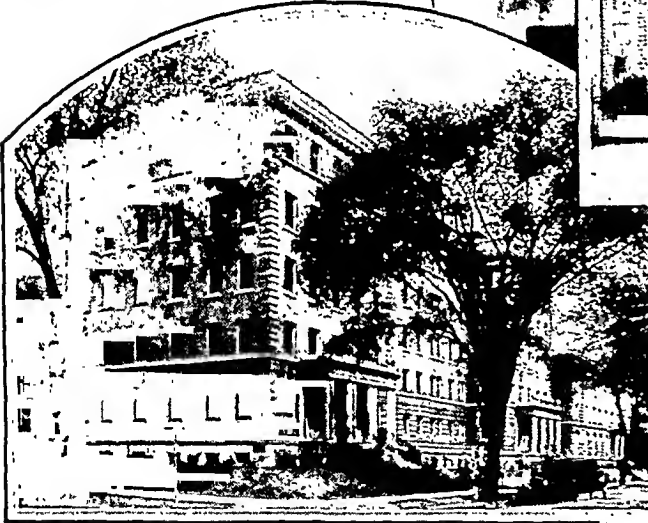


MOUNT SINAI HOSPITAL



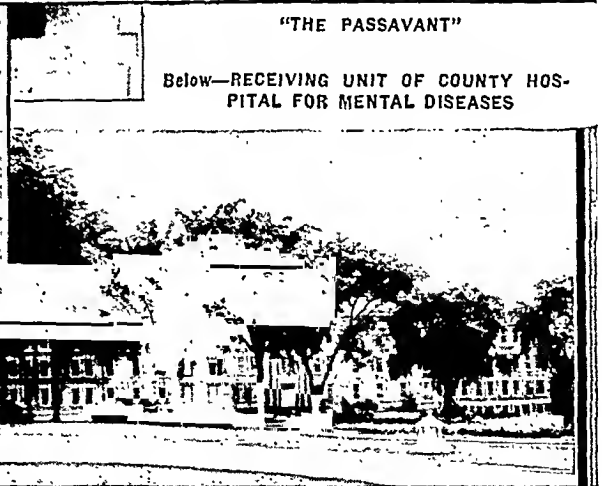
MILWAUKEE COUNTY HOME FOR CHILDREN

Below—MILWAUKEE CHILDREN'S HOSPITAL



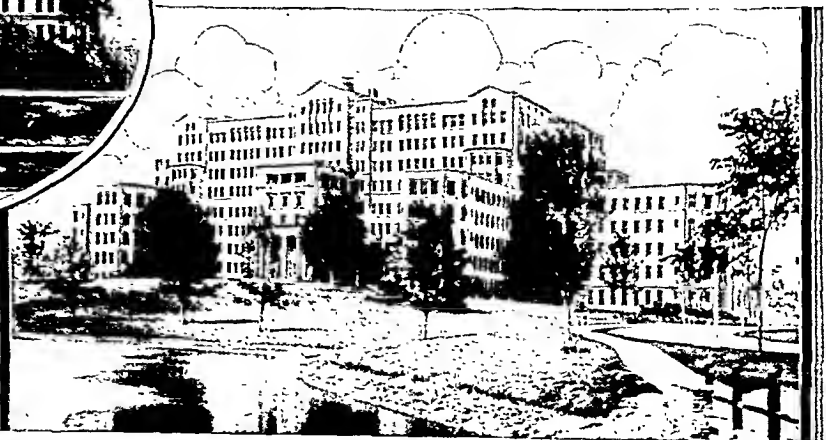
"THE PASSAVANT"

Below—RECEIVING UNIT OF COUNTY HOSPITAL FOR MENTAL DISEASES



MILWAUKEE COUNTY DISPENSARY
AND EMERGENCY UNIT

THE COUNTY GENERAL HOSPITAL
AT WAUWATOSA



SOME MILWAUKEE HOSPITALS

REGISTRATION

The Bureau of Registration will be located in the Milwaukee Auditorium, North Fifth Street between West Kilbourn Avenue and West State Street. Members of the Committee on Registration of the Local Committee on Arrangements will be on hand to assist those who desire to register.

A branch postoffice in charge of government postoffice officials will be available for visitors, and an information bureau will be operated in connection with the Bureau of Registration.

Who May Register

Only Fellows, Affiliate, Associate and Honorary Fellows, and Invited Guests may register and take part in the work of the sections. Fellows of the Scientific Assembly are those who have, on the prescribed form, applied for Fellowship, subscribed to *THE JOURNAL*, and paid their Fellowship dues for the current year. The annual Fellowship dues provide a subscrip-

tion for 1933 should write to the American Medical Association for application blanks and information as to further requirements.

Register Early

Fellows living in Milwaukee, as well as all other Fellows who are in Milwaukee on Monday and Tuesday, should register as early as possible. The names of those who register will appear in the *Daily Bulletin* the next day, and this will enable visiting physicians to find friends if they have registered.

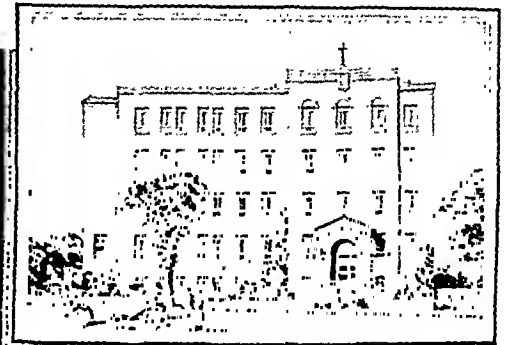
Suggestions That Will Facilitate Registration

Fellows should fill out completely the spaces on both sections of the front of the *white* registration card, which will be found on the tables in front of the Registration Bureau.

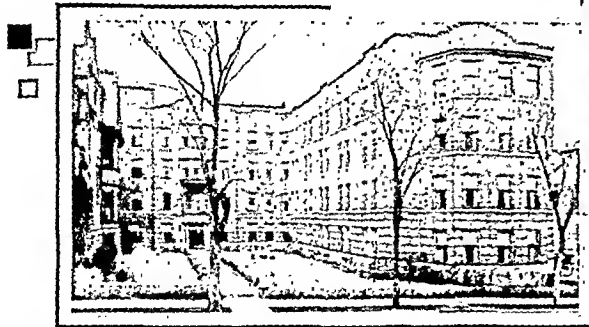
Physicians who desire to qualify as Fellows should fill out completely the spaces on both sections of the front of the *blue*



EVANGELICAL DEACONESS HOSPITAL



ST. ANTHONY HOSPITAL



ST. LUKE'S HOSPITAL



ST. JOSEPH'S HOSPITAL

SOME MILWAUKEE HOSPITALS

tion to *THE JOURNAL* for one year. Fellowship cards are sent to all Fellows after payment of annual dues, and these cards should be presented at the registration window. Any who have not received cards for 1933 should secure them at once by writing to the American Medical Association, 535 North Dearborn Street, Chicago.

Members in Good Standing Eligible to Fellowship

Members in good standing in component county medical societies are members of constituent state associations and of the American Medical Association. All members in good standing may apply for Fellowship in the Scientific Assembly and are urged to qualify as Fellows before leaving home in order that pocket cards may be secured and brought to Milwaukee so that registration can be more easily and more promptly effected. Application forms may be had on request. Subscribers to *THE JOURNAL* who have not received pocket cards

registration card, and sign the application on the back. These cards will be found on the tables.

Entries on the registration cards should be written plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*, published on Tuesday, Wednesday, Thursday and Friday of the week of the session.

Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out *white* registration card, together with their pocket cards, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a badge, a copy of the official program and other printed matter of interest to those attending the annual session.

As previously stated, it will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical

Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than May 22. Any applications received later than May 22 will be given prompt attention, but the Fellowship pocket card may not reach the applicant in time for him to register at the Milwaukee session.

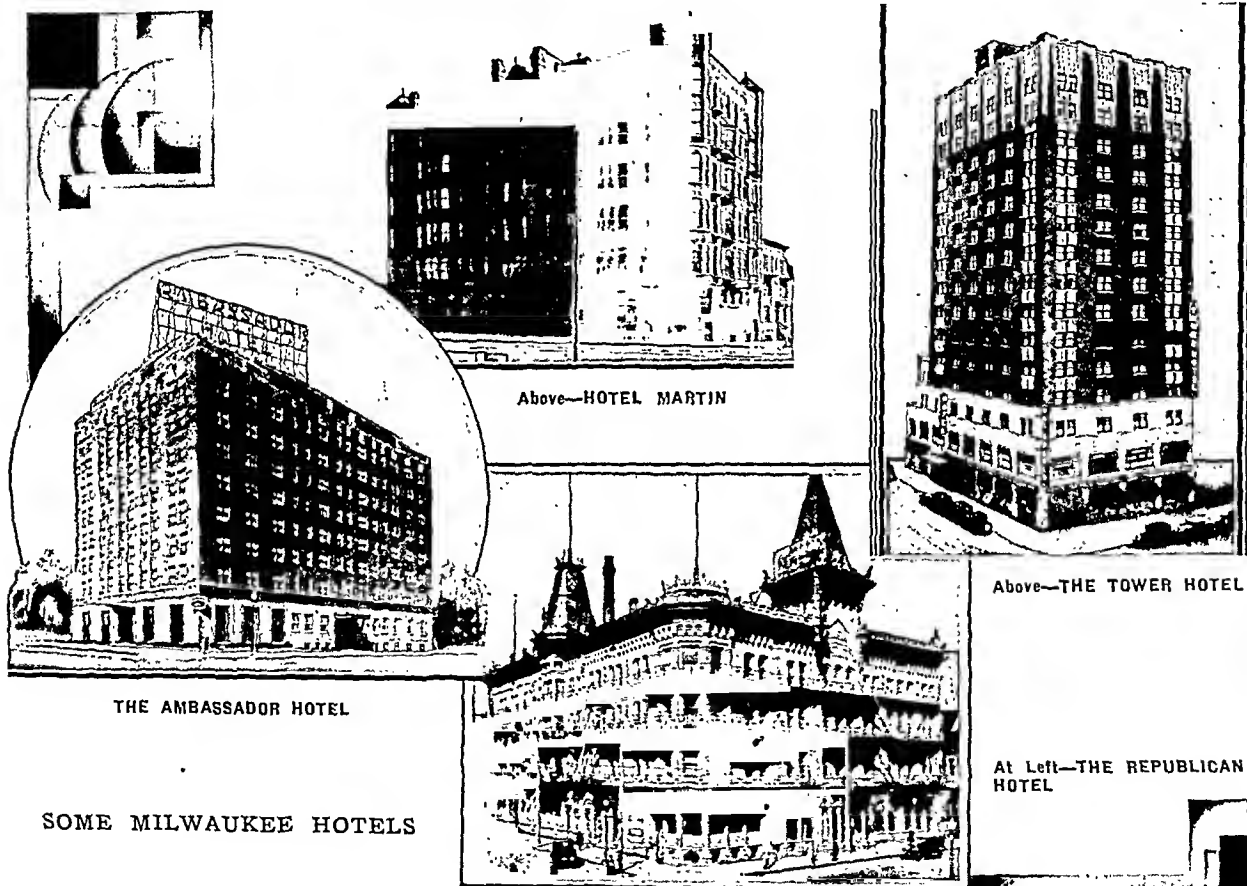
It will be possible for members of the organization to qualify as Fellows at Milwaukee. In order to do this, applicants for Fellowship will be required to fill out both sections of the front of the *blue* registration card and to sign the formal application that is printed on the reverse side of the card. As already stated, registration can be effected more easily and more promptly if members qualify as Fellows before leaving home.

It is suggested that those who apply for Fellowship at Milwaukee provide themselves, before leaving home, with certificates signed by the secretaries of their state associations, attesting that they are members in good standing in state and county branches of the organization. A state membership card for 1933 will be acceptable. The certificate or membership card

should be presented along with the filled in *blue* registration card at the window in the booth marked "Applicants for Fellowship."

Registration for Delegates at the Hotel Schroeder

General Officers of the American Medical Association and members of the House of Delegates may register for the Scientific Assembly at a booth in the Grand Ball Room of the Hotel Schroeder. This arrangement is made for the convenience of the members of the House of Delegates, which will convene on Monday morning at 10 o'clock in the Grand Ball Room of the Hotel Schroeder. Delegates are requested to register for the Scientific Assembly before presenting credentials to the Reference Committee on Credentials of the House of Delegates. Registration of delegates for the Scientific Assembly will begin at 8 o'clock, Monday morning, June 12, and delegates are urged to register early so that all members of the House of Delegates may be seated in time for the opening session of the House.



SOME MILWAUKEE HOTELS

SECTION MEETING PLACES

SECTIONS OF SCIENTIFIC ASSEMBLY

PRACTICE OF MEDICINE: Plankinton Hall, Milwaukee Auditorium.

SURGERY, GENERAL AND ABDOMINAL: Engelman Hall, Milwaukee Auditorium.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Engelman Hall, Milwaukee Auditorium.

OPHTHALMOLOGY: Kilbourn Hall, Milwaukee Auditorium.

LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY: Kilbourn Hall, Milwaukee Auditorium.

PEDIATRICS: Plankinton Hall, Milwaukee Auditorium.

PHARMACOLOGY AND THERAPEUTICS: North Section, Market Hall, Milwaukee Auditorium.

PATHOLOGY AND PHYSIOLOGY: North Section, Market Hall, Milwaukee Auditorium.

NERVOUS AND MENTAL DISEASES: North Section, Juneau Hall, Milwaukee Auditorium.

DERMATOLOGY AND SYPHILOLOGY: South Section, Juneau Hall, Milwaukee Auditorium.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH: Stage of Main Arena, Milwaukee Auditorium.

UROLOGY: South Section, Juneau Hall, Milwaukee Auditorium.

ORTHOPEDIC SURGERY: North Section, Juneau Hall, Milwaukee Auditorium.

GASTRO-ENTEROLOGY AND PROCTOLOGY: Stage of Main Arena, Milwaukee Auditorium.

RADIOLOGY: Walker Hall, Milwaukee Auditorium.

MISCELLANEOUS TOPICS, SESSIONS ON ANESTHESIA: Walker Hall, Milwaukee Auditorium.

The Milwaukee Auditorium is located on North Fifth Street between West Kilbourn Avenue and West State Street.

OTHER MEETING PLACES

HOUSE OF DELEGATES: Grand Ball Room of the Hotel Schroeder, 643 North Fifth Street.

OPENING GENERAL MEETING: Plankinton Hall, Milwaukee Auditorium.

CLINICAL LECTURES: Plankinton Hall, Milwaukee Auditorium.

MILWAUKEE HOTELS

A list of Milwaukee hotels is presented for the benefit of those who expect to attend the annual session of the American Medical Association, June 12-16. Dr. Harry J. Heeb is the chairman of the Subcommittee on Hotels of the Local Committee on Arrangements and may be addressed at 740 North Second Street, Milwaukee, Wis. The advertising announcement and coupon for reservations appear on advertising page 63 of this issue.

Hotels at Milwaukee

Name and Address	Single		Double		Suites
	Without Bath	With Bath	Without Bath	With Bath	
ABBOTT CREST..... 1226 W. Wisconsin Ave.	\$2.00-2.50	\$3.00-3.50	\$3.00-3.50	\$4.00-6.00	\$8-10
AMBASSADOR..... 2308 W. Wisconsin Ave.	.....	2.75-4.00	.....	5.50-7.00	10
ASTOR..... 924 E. Juneau Ave.	.....	3.00-5.00	.....	5.00-8.00	8-15
BELMONT..... 751 N. Fourth St.	2.00-2.50	2.50-3.00	3.00-3.50	3.50-5.00	.....
BLAZE..... 145 E. Wells St.	1.50-1.75	2.50-3.00	2.50-3.00	3.50-6.00	.....
CARLTON..... 1120 N. Milwaukee St.	1.50-2.00	2.50-3.50	2.00-2.50	3.50-6.00	6.00
COLONIAL..... 826 N. Cass St.	.....	1.50-2.00	.....	2.00-5.00	3.50-5
GLOBE..... 803 E. Wisconsin Ave.	1.50-2.00	2.50-3.00	2.50-3.00	4.00-5.00	.....
JUNEAU..... 807-815 E. Wisconsin Ave.	.....	.....	2.50-3.00	3.50-5.00	.....
KNICKERBOCKER..... 1028 E. Juneau Ave.	.....	3.00-4.50	.....	5.00-7.00	10-25
LA SALLE..... 729 N. Eleventh St.	.....	2.50-3.00	.....	3.50-6.00	5-10
MARTIN..... 707 E. Wisconsin Ave.	1.25-2.00	2.25-3.00	3.00-3.50	3.25-5.00	.....
MARYLAND..... 625 N. Fourth St.	1.50-1.75	2.50-3.00	3.00-3.50	5.00-7.00	.....
MEDFORD..... 605 N. Third St.	2.25-2.75	2.75-3.00	3.25-4.00	3.75-5.50	.....
MILLER..... 723 N. Third St.	1.25-2.00	2.50-3.50	3.00-5.00	4.00-5.00	.....
NEW PFISTER..... 424 E. Wisconsin Ave.	2.50-3.00	3.50-5.00	4.00-5.00	5.00-8.00	15-30
PLANKINTON..... 609 N. Plankinton Ave.	.....	3.00-5.00	.....	5.00-8.00	12-15
PLAZA..... 1007 N. Cass St.	.....	2.50-3.50	.....	4.00-5.00	.....
REPUBLICAN..... 907 N. Third St.	1.50-2.00	2.50-5.00	2.50-4.00	3.50-6.00	8-12
ROYAL..... 435 W. Michigan St.	2.00-2.50	.....	3.00-4.00	4.00-6.50	.....
ST. LAWRENCE..... 1026 N. Jackson St.	.....	2.50	.....	3.50	.....
SCHROEDER..... 643 N. Fifth St.	Booked to capacity				
SEVEN-SEVENTY MARSHALL..... 770 N. Marshall St.	.....	2.50-3.00	.....	3.50-5.00	.....
SHORECREST..... 1962 N. Prospect Ave.	.....	3.50-4.00	.....	5.00-7.00	8-20
TOWER..... 716 N. Eleventh St.	.....	2.50-3.00	.....	4.00-6.00	.....
WISCONSIN..... 714 N. Third St.	2.50-3.50	3.00-4.00	3.50-4.00	5.00-7.00	.....

Physicians Invited to Y. M. C. A. Hotel.—Medical visitors to Chicago during the Century of Progress Exposition are invited to avail themselves of the facilities of the West Side Professional Schools Y. M. C. A. This building is located in the heart of Chicago's West Side Medical Center, one block from the Cook County Hospital and opposite the Presbyterian Hospital. It is also within two miles of the Century of Progress Exposition grounds and easily accessible by bus, cab and elevated and surface lines. There are special floors for ladies. The rates are from \$1.25 per day up, and from \$7 to \$8.50 per week. Information concerning facilities and rates may be had by addressing the secretary at 1804 Congress Street, Chicago.

ENTERTAINMENT

Opening General Meeting

The Opening General Meeting will be held on Tuesday evening, June 13, at 8 o'clock in Plankinton Hall, Milwaukee Auditorium. A dance will follow at the Wisconsin Club.

President's Reception

On Thursday evening, June 15, at 9 o'clock there will be a reception and ball in honor of the President at the Hotel Schroeder.

Dinner for General Officers and Delegates

On Monday evening, June 12, at 7 p. m., at the Wisconsin Club, the State Medical Society of Wisconsin and the Medical Society of Milwaukee County will give a dinner in honor of the general officers and members of the House of Delegates. If weather permits, dinner will be served in the garden surrounding the clubhouse.

Bring-Your-Husband Dinner

The Bring-Your-Husband Dinner, sponsored by the Woman's Auxiliary, is to be held at the New Pfister Hotel, Thursday evening, June 15, prior to the President's Reception and Ball. Members not accompanied by their wives are also urged to attend the dinner. Tickets, \$1.50.

Alpha Omega Alpha Dinner

On Thursday, June 15, at 6:30 p. m., at the Hotel Schroeder, the Alpha Omega Alpha Honorary Fraternity will have its annual dinner and meeting. Dr. Charles F. Martin, dean of the Faculty of Medicine of McGill University, will give the William W. Root Alpha Omega Alpha Lecture.

Alumni Dinners

The following alumni groups will hold their dinners at the Hotel Pfister at 6:30 p. m. on Wednesday, June 14: Northwestern University, Rush Medical College, Columbia University, Marquette University, University of Wisconsin, University of Minnesota, University of Maryland, University of Illinois, Harvard-Yale and Johns Hopkins. The alumni group of the University of Pennsylvania will hold its dinner at the University Club on Wednesday evening, June 14, at 6:30. Alumni of Canadian medical schools are also planning a dinner.

Dinner for Medical Veterans

A dinner for the Medical Veterans of the World War will be given on Wednesday evening. Dr. Gilbert Seaman, who is president of the Medical Veterans of the World War, is arranging for this dinner.

American Board of Obstetrics and Gynecology

There will be a dinner and round table conference of the American Board of Obstetrics and Gynecology at the Hotel Schroeder at 7 p. m., Wednesday, June 14. Subscription for the dinner will be \$1.75, and reservations should be made in advance through Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pa.

Rush Medical College University of Chicago Alumni Dinner

The Rush Medical College University of Chicago will have its alumni dinner at 7 p. m. at the Hotel Schroeder, Wednesday, June 14. Ladies are welcome.

Phi Delta Epsilon Luncheon

Members of Phi Delta Epsilon will have a luncheon in the Gold Room of the Hotel Wisconsin on Wednesday, June 14, at 1 p. m. Dr. E. J. Ansfield is chairman of the luncheon committee.

Chicago Medical Society.—The Chicago Medical Society extends a most cordial invitation to all members of the American Medical Association who plan to attend A Century of Progress to make their headquarters at the society's exhibit in the Hall of Science. All information regarding clinics, lectures, etc., may be obtained through the secretary's office, Medical Arts Building, 185 North Wabash Avenue, Chicago.



THE SHORECREST HOTEL



THE NEW PFISTER HOTEL



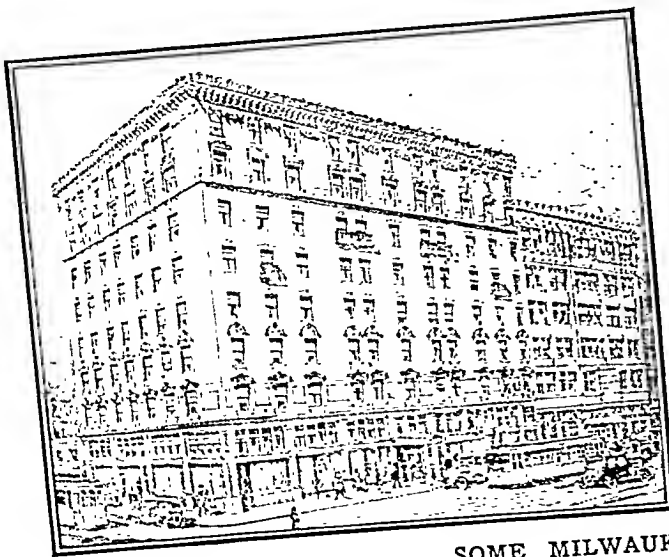
HOTEL WISCONSIN



HOTEL ASTOR



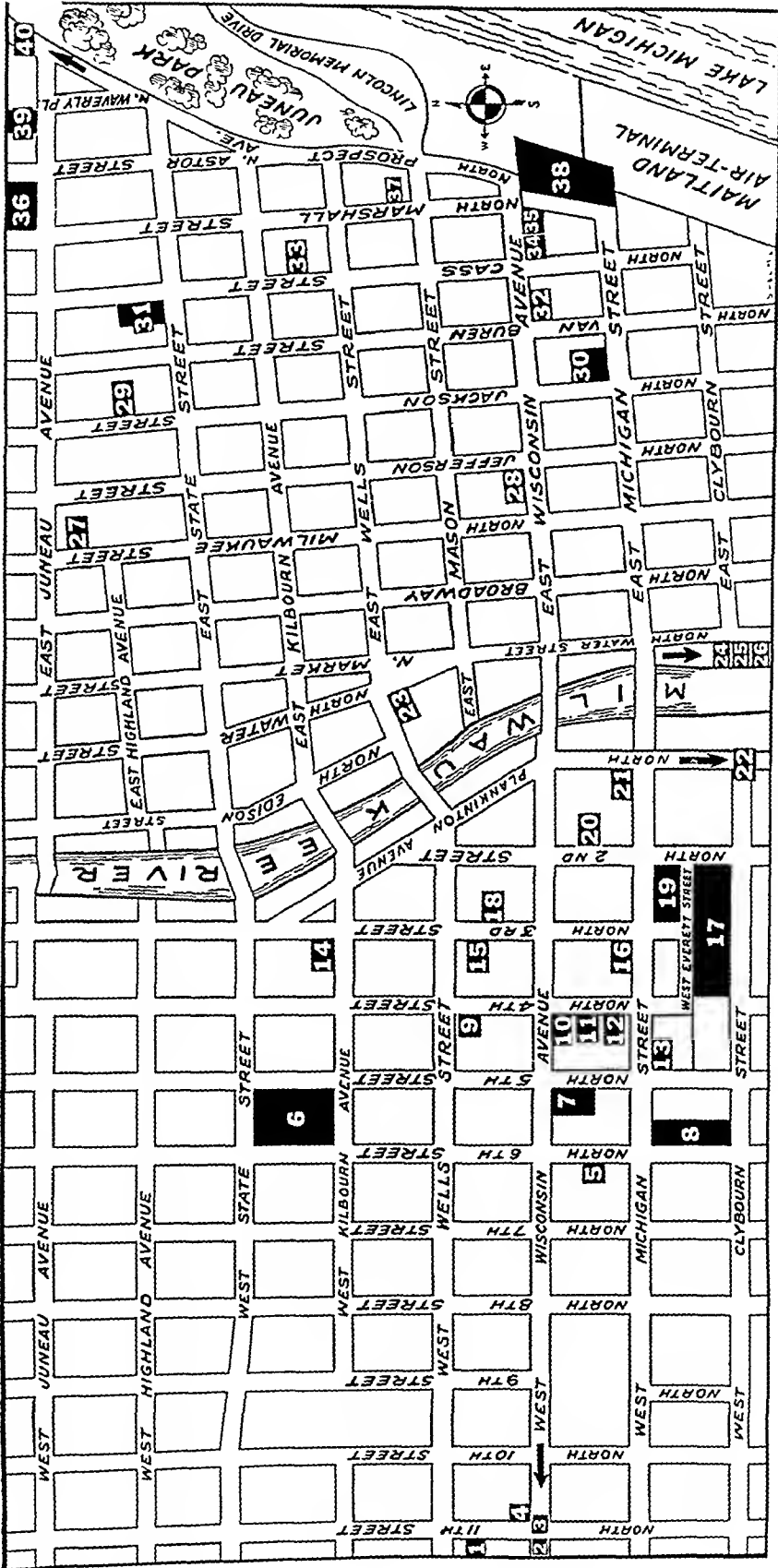
THE SCHROEDER HOTEL



HOTEL MEOFORO

SOME MILWAUKEE HOTELS

MAP OF MILWAUKEE



Key to Map

Abbott Crest Hotel.....	2	Plaza Hotel.....	31
Ambassador Hotel.....	3	Republican Hotel.....	14
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Chicago, Milwaukee, St. Paul and Pacific Railroad Depot.....	17	Union Station.....	17
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Colonial Hotel.....	33	Wisconsin Hotel.....	18
Globe Hotel.....	34	Wisconsin Motor Bus Lines Station.....	19
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Great Lakes Transit Corporation.....	25		
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Maryland Hotel.....	12		
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CLINICAL LECTURES

PLANKINTON HALL, MILWAUKEE AUDITORIUM

MONDAY, JUNE 12—2 P. M.

Nasal Sinusitis. L. W. DEAN, St. Louis
Lymphogranuloma Inguinale. HAROLD N. COLE, Cleveland
Migraine. PETER BASSOE, Chicago

TUESDAY, JUNE 13—9:30 A. M.

Infectious Mononucleosis (Glandular Fever). THOMAS P. SPRUNT, Baltimore
Recent Progress in Thoracic Surgery. CARL A. HEDBLOM, Chicago

Diagnosis and Treatment of Injuries of the Head.

WALTER E. DANDY, Baltimore

TUESDAY, JUNE 13—2 P. M.

Clinical Control of Chronic Hemorrhagic States in Childhood. I. NEWTON KUGELMASS, New York
Purpura and Pathologic Hemorrhage. RUSSELL L. HADEN, Cleveland
Clinical Interpretation of the Electrocardiogram. L. M. HURXTHAL, Boston.

LOCAL COMMITTEE ON ARRANGEMENTS

STANLEY J. SEEGER, Chairman

CHAIRMEN OF SUBCOMMITTEES

Sections and Section Work, Carl Henry Davis
Registration, C. C. Schneider
Technical Exhibits, Harry W. Sargent
Scientific Exhibit, Francis D. Murphy

Hotels, Harry J. Heeb
Printing and Information, H. J. Grambling
Publicity, Mr. Theodore Wiprud
Transportation, Ernest W. Miller

Finance, Charles Fidler
Women Physicians, Eleanore Cushing-Lippitt
Entertainment, Ralph P. Sproule

WOMAN'S AUXILIARY

All women attending the annual session of the American Medical Association are invited to participate in this program whether they are members of the Woman's Auxiliary or not.
Headquarters: Hotel New Pfister.

MONDAY, JUNE 12

10:00 a. m. Preconvention Board Meeting. Mrs. James F. Percy, presiding. Hotel New Pfister.
12:30 p. m. Luncheon at College Women's Club in honor of past presidents, followed by visit to American Medical Association exhibits at Milwaukee Auditorium. Tickets, \$1.
2:30 p. m. Preconvention Board Meeting. Mrs. James F. Percy, presiding. College Women's Club.
7:00 p. m. Dinner for National Board, delegates, and wives of officers and delegates of the American Medical Association, at Woman's Club of Wisconsin. Tickets, \$1.25. Musical program furnished by Artist Members of the Auxiliary to the Medical Society of Milwaukee County.

TUESDAY, JUNE 13

9:00 a. m. General Meeting. Mrs. James F. Percy, presiding. Hotel New Pfister.
1:00 p. m. Luncheon and Bridge at the Wisconsin Club. Tickets, \$1.25.
2:30 p. m. Attractions available for those not wishing to play bridge are the Layton Art Gallery, Milwaukee Art Institute, Milwaukee Museum, Curative Work Shop and Vocational School or a bus trip to County Institutions, the Milwaukee Children's Hospital Convalescent Home and the Washington Park Zoo.
8:00 p. m. Opening General Meeting of the American Medical Association, Plankinton Hall, Milwaukee Auditorium.
10:00 p. m. Informal dance at the Wisconsin Club, courtesy of the State Medical Society of Wisconsin. Hostess: Woman's Auxiliary to the State Medical Society of Wisconsin.

WEDNESDAY, JUNE 14

9:00 a. m. General Meeting and Election of Officers. Mrs. James F. Percy, presiding. Hotel New Pfister.

12:30 p. m. Auxiliary Luncheon. Hotel New Pfister. Guests and Speakers from the American Medical Association. Tickets, \$1.

4:00 p. m. Teas in private residences.

8:30 p. m. Light Opera—International House Opera Company.

THURSDAY, JUNE 15

9:00 a. m. Postconvention Board Meeting. Hotel New Pfister.
10:00 a. m. General Meeting. Mrs. James Blake presiding. Hotel New Pfister.
11:00 a. m. General Round Table Conference.
12:00 noon. Trip to Oconomowoc Lake District. Luncheon 12:30 p. m., at Carnation Milk Plant, Oconomowoc, Wis. Transportation and luncheon courtesy of the Carnation Milk Company.

or

12:30 noon. Buffet Luncheon, Hotel New Pfister. Tickets, 75 cents.
2:00 p. m. Sight Seeing Tour of Milwaukee.
6:30 p. m. "Bring Your Husband" Dinner. Hotel New Pfister. International House Cabaret. Tickets, \$1.50.
9:00 p. m. President's Reception and Ball, Hotel Schroeder. Host: American Medical Association.

FRIDAY, JUNE 16

10:00 a. m. Golf Tournament.
All trips start from the Hotel New Pfister. Bus transportation is to be paid by individuals.
MRS. ROCK SLEYSTER, General Chairman.

MEDICAL WOMEN'S NATIONAL ASSOCIATION

The business meetings of the Medical Women's National Association will be held at the Hotel Astor on Sunday morning, June 11, at 10 a. m. and during the day on Monday, June 12. Various breakfast meetings of the organization will also be held Tuesday, Wednesday, Thursday and Friday, June 13, 14, 15 and 16, at 8 a. m.

GOLF TOURNAMENT

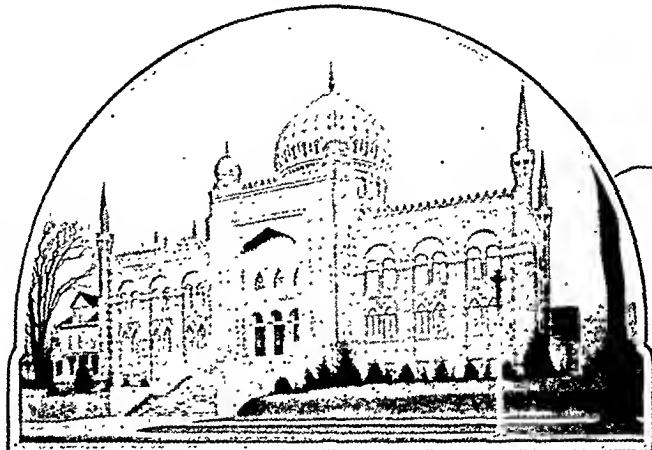
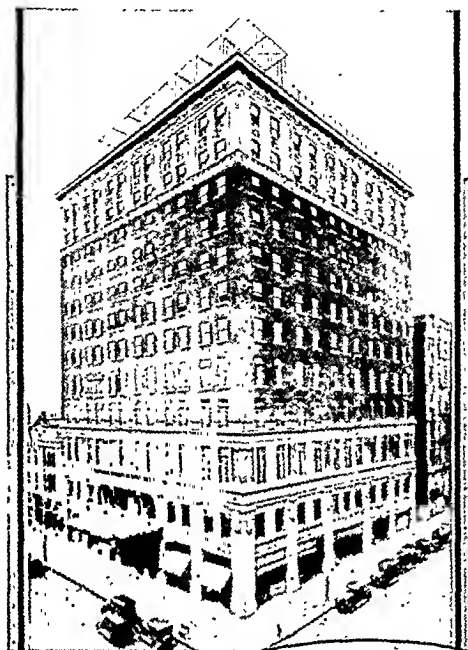
The American Medical Golfing Association, headed this year by Dr. John Welsh Croskey of Philadelphia, will hold its Nineteenth Annual Tournament over the Blue Mound Country Club course, Milwaukee, on Monday, June 12.

Play will begin at 8 a. m., with all teeing off on the beautiful and interesting Blue Mound course before 3:30 p. m. Dinner will be served at the club at 6:30 p. m., followed by distribution of approximately fifty trophies and prizes in the eight major events covering both thirty-six and eighteen-hole play. Past-President Frank A. Kelly of Detroit will be on hand with his inimitable stories. In addition, the local committee promises

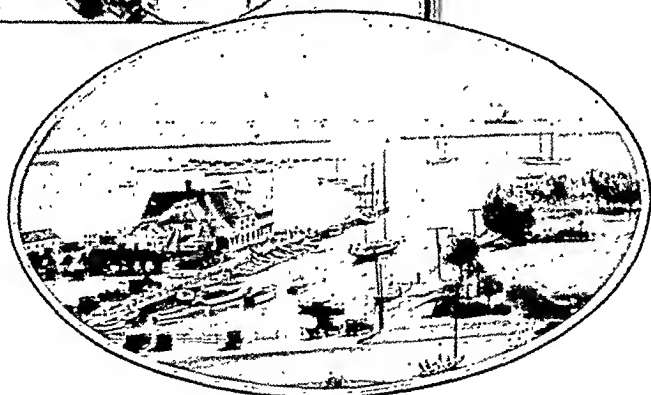
that, at this tournament, Milwaukee's fame will not be lessened in quality or quantity.

Bargain prices will prevail this year. Thirty-six holes of golf, dinner, prizes and entertainment, will be considerably less than \$5 to Active Fellows. All Fellows are invited to play over the course for a practice round (on Sunday) before Monday's tournament.

Any male Fellow of the American Medical Association in good standing is eligible for membership in the American Medical Golfing Association, on acceptance of its by-laws and payment of the enrolment fee. All communications concerning the golf tournament or enrolment may be addressed to William J. Burns, Executive Secretary, 4421 Woodward Avenue, Detroit.



THE TRIPAH TEMPLE



THE ELKS' CLUB

Above—THE MILWAUKEE ATHLETIC CLUB
Below—THE YACHT CLUB

A WISCONSIN VACATION

Because of its peculiar geology, the state of Wisconsin can be called a scenic sample box. In addition, it has among its attractions some 20,000 Indian mounds, and lakes estimated to number between 7,000 and 9,000, many of which are not recorded on any maps.

It is worthy of note that Dr. William Beaumont lived for a time at Green Bay while he made some of his interesting experiments on the stomach of Alexis St. Martin. The boyhood home of Dr. Nicholas Senn and the scene of his practice for a time was at Campbellsport, 16 miles southwest of Fond du Lac.

INDIAN MOUNDS

When James Brice visited Wisconsin some years ago, he said: "Show me the Indian mounds—other cities can show me buildings. I want to learn something of the earthworks of the race which inhabited this continent before it was discovered by

Columbus." Wisconsin is in the heart of the effigy mound region, and the prehistoric Indians who built these strange earthworks were almost entirely restricted to this area.

Some of the earthworks are several feet high, although many of them are only low mounds built in the shape of a bird, turtle, bear or panther. A man-shaped mound is found near Baraboo, and at Aztalan near Lake Mills is a group of earthworks which mark an ancient village site. A turtle-shaped mound and a bird effigy are found on Observatory Hill overlooking Lake Mendota on the grounds of the University of Wisconsin at Madison.

Today there are eight Indian reservations in northern Wisconsin totaling 604,458 acres, with an Indian population of more than 11,000 representing the tribes of the Chippewa, Menomonee, Stockbridge, Munsee, Oneida and Winnebago.

NORTHERN LAKES AND HIGHLANDS

All highways entering Wisconsin can be followed to the northern highland and lake region, where in seventeen counties there is an average of 25 acres of water per square mile. Pines, hemlocks, birch and poplar line the lake shores. Waterfalls and cascades are to be found on the rivers. More than 60 per cent of northern Wisconsin is covered with forests, and there are hundreds of miles of wild natural setting. Some of these are equipped with modern hotels and resorts, while in others only the call of the whippoorwill, the laughter of the loon, or the bark of a coyote will be heard at the campfire.

The sufferer from hay fever, the fisherman, the outdoor sports enthusiast who goes in for swimming, canoeing and horseback riding, and the motorist who drives from one scenic spot to another will find in this upper Wisconsin region the happy hunting ground of his dreams.

In the central and eastern part of northern Wisconsin is the land of lakes and heart of lakes area, where, in a single county,

Every one crossing the Mississippi or who drives along that waterway will recognize in it many features similar to the German Rhine and the Hudson. In Nelson Dewey State Park, south of Prairie du Chien on U. S. highways 18 and 61, and at Perrot State Park, a few miles from U. S. 53 near Trempealeau, the roads wind to the top of high bluffs to reveal two of the most beautiful panoramas on the Father of Waters. A fine assortment of Indian mounds are found at Nelson Dewey Park.

Southwestern Wisconsin, including fourteen counties entirely and parts of six other counties, or an area of 10,000 square miles, has been called the Wisconsin Berkshires, because of its picturesque hills and crags and cedar-crested ridges, with canyons and valleys where babbling brooks wander away through sun and shadow.

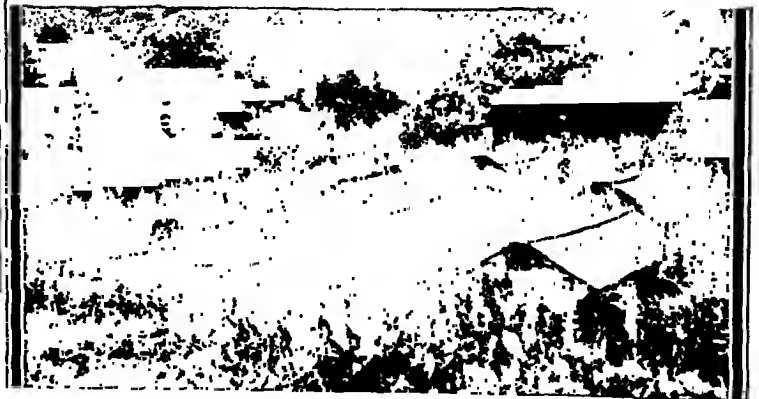
While the remainder of Wisconsin's landscape was molded and smoothed by great continental glaciers some 50,000 years ago, these glaciers did not touch the Wisconsin Berkshires and



COPPER FALLS STATE PARK



A POND ALONG THE MISSISSIPPI RIVER



AN INDIAN CEMETERY IN NORTHERN WISCONSIN

92,900 acres is taken up in lakes, and the roads wind from one lake shore to another.

Wisconsin fish include the fighting muskellunge, the pike, the bass, trout, and all other inland water fish. The supply is maintained by the annual distribution of 425,000,000 fish to lakes and streams by the state conservation department.

PICTURESQUE WISCONSIN

Some of Wisconsin's most picturesque and interesting country is that which begins with the cherry orchards of Door County Peninsula and follows a long limestone ridge southward. Door County has two state parks. Halfway down this ridge, or between Fond du Lac and Sheboygan, roads wind through dips and hollows of what geologists call a kettle moraine but which in reality resembles a succession of small volcanic craters and by the lumberjacks are known as Paul Bunyan's pot holes. The rolling ridges and prairies of southeastern Wisconsin are dotted with huge dairy barns and silos. (Wisconsin has 118,000 silos.) Cheese factories and creameries are found every few miles, and thousands of acres of tobacco and canning peas are grown here.

a small portion of the adjoining states of Minnesota, Iowa and Illinois. It is the region of the coulées made famous by the novelist Hamlin Garland a generation ago. Some of Wisconsin's finest apples and grapes come from orchards and vineyards in the Kickapoo Valley.

It is this peculiar formation which is responsible for the Dells of the Wisconsin River, on federal highways 12 and 16, and the interesting rock structures that may be found there.

At Devil's Lake the glaciers pushed around two huge quartzite bluffs, blocked a former river valley, and created a lake, which resembles in nearly every detail a typical Rocky Mountain scene. The quartzite bluffs belong to the oldest rock of the earth's surface, and now and then there may be seen in this quartz formation wave markings made by water from 700 to 1,000 million years ago.

The traveler is invited to take his pick of scenes and places in Wisconsin. Whether it is driving, camping, hunting, fishing, canoeing, or water sports, the traveler can write his own ticket to the Happy Hunting Grounds when he comes to Wisconsin.

WYMAN S. SMITH.

A CENTURY OF PROGRESS INTERNATIONAL EXPOSITION

CHICAGO, JUNE 1—NOV. 1, 1933

EBEN J. CAREY, M.D.

The Chicago world's fair opens at 10 o'clock on the morning of June 1. The Hall of Science, dedicated last June, has 9 acres of space in which exhibits of physics, chemistry, biology, mathematics, geology and medicine—both scientific and industrial—are displayed. The medical sciences occupy 29,600 square feet of floor space net, and the industrial section occupies 35,000 square feet.

This is the first time in the history of international exhibitions in America that organized medicine, dentistry and pharmacy have presented to the public the story of their contributions to the progress of civilization.

The Medical Advisory Committee includes: Drs. William Allen Pusey, chairman; Frank Billings (deceased), Ludvig Hektoen, Herman L. Kretschmer, Paul Nicholas Leech, Arthur Black, Bert W. Caldwell, Nelson Mayo, Julius Stieglitz, Benjamin H. Orndoff, A. S. Burdick (deceased), Morris Fishbein, C. H. Searle, Lloyd Arnold and Franklin Martin; Messrs. Thomas McMahon, R. A. Whidden, Edwin R. Embree, Julius Riemen-schneider, H. C. Christensen, Will J. Cameron, Harry C. Phibbs, S. DeWitt Clough, George H. Merck, and Prof. E. N. Gathercoal.

The objectives of the exhibits on health education by the visual and auditory methods are: (1) to compare health conditions of a hundred years ago with those of today; (2) to instruct the public in the intricacy of the living human machine and to give warning not to meddle with it by dangerous self medication; (3) to interest the layman in the scientific story behind the physician's services and opinions regarding health and sickness; (4) to show that compassion for suffering humanity and not commercialism ruled the lives of the great discoverers and practitioners of medicine.

THE FOREIGN EXHIBITS OF
MEDICAL SCIENCE

The name of the contact official only is mentioned after each institution.

England.—THE WELLCOME RESEARCH INSTITUTION OF LONDON (Sir Henry Wellcome): The Wellcome Historical Museum has dioramas that illustrate epoch-making events in British medicine and surgery. The Wellcome Museum of Medical Science demonstrates by models, charts, diagrams, and the like, the causes, methods of infection, symptoms, prevention and treatment of malaria, trypanosomiasis, kala-azar, leprosy, plague and bilharziasis. The Wellcome Bureau of Scientific Research has contributions from the departments of protozoology, helminthology, bacteriology and experimental pathology. *Trypanosoma grayi* in the tsetse fly, series of worms parasitic to man and animals and Rift Valley fever—a newly discovered disease in British East Africa—constitute part of the exhibit. The Wellcome Entomological Field Laboratories and Physio-

logical Research Laboratories have exhibits that deal respectively with the mosquito and with the physiologic, pharmacologic and serologic problems on the production of diphtheria, tetanus and other antitoxins. Diseases in animals such as lamb dysentery, dog distemper, braxy in sheep, canine jaundice, bacillary white diarrhea in poultry, tetanus in horses and fowl pox are presented by appropriate exhibits. The Wellcome Chemical Research Laboratories are contributing exhibits on five groups of drugs: antimalarial, antileprotic, amebacidal, anthelmintics and antimonial drugs. A model of the Wellcome Research Institution in London, a model of the floating laboratory presented by Sir Henry Wellcome to the Sudan government on the Nile, and a model of the mobile field laboratory given to the British war office during the Great War are exhibited.

France.—INSTITUT PASTEUR (P. Lecomte du Nouy and W. Roux): An illuminated map of the world, 12 by 20 feet, shows the distribution of Pasteur institutes. By means of photographs, in a space 12 by 20 feet, are effectively presented the life of Louis Pasteur; his work on crystals, silkworm, fermentation in beer, wine and milk, and the relation of microbes in human and animal diseases, and the life and work of the pupils of Pasteur and their influence on human welfare.

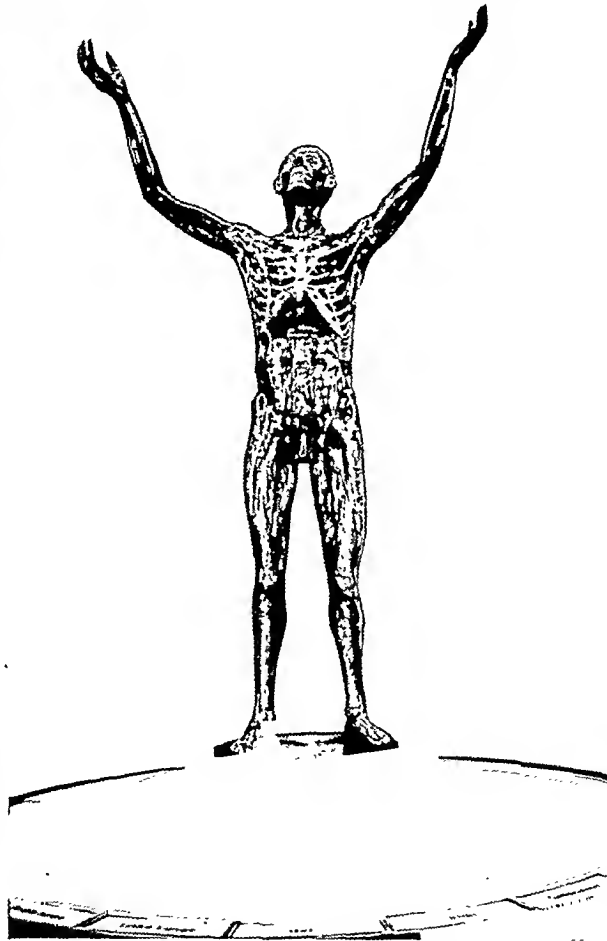
Germany.—ROBERT KOCH INSTITUT (F. Neufeld): By means of models, photographs, portraits, drawings and charts are displayed the life and work of Robert Koch, who discovered the tubercle bacillus in 1882.

PUBLIC HEALTH EXHIBIT OF BERLIN (von Drigalski): By means of models, charts and diagrams, the recent advances of public health in Berlin are portrayed.

THE DEUTSCHES HYGIENE MUSEUM, Dresden, Saxony (Exhibits purchased by A Century of Progress): The Transparent Man is a life-size model made out of cellophane, a transparent material, to show all interior organs, illuminated in rotation, in their relation to

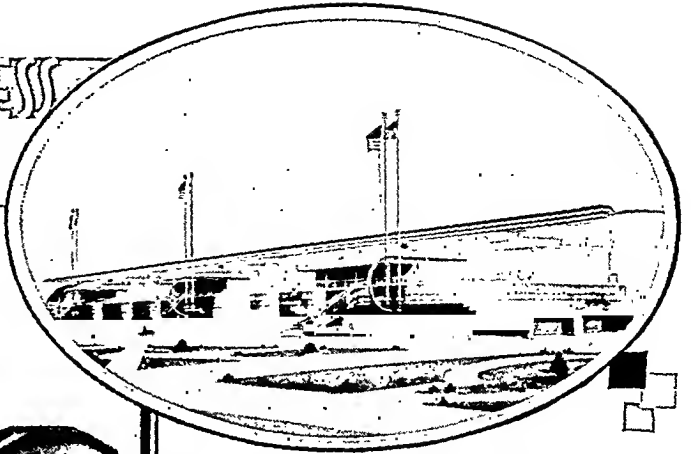
the skin surface. Other dynamic models manifesting human structure and function, which may be motivated by the observer, are as follows: the different kinds of joints; nodding and rotating movements of the head; circulation of one blood corpuscle; cooperation of the diaphragm and lungs in respiration; abdominal breathing, showing the movement of the chest and diaphragm; movement of the rima glottidis; the larynx in a laryngopharyngeal mirror; formation of sounds; example of reflexion—knee jerk; torso of wooden man—sagittal section in eight parts; horizontal sections of wooden man, in fifteen parts.

Italy.—Medical exhibits from the Italian government (E. Bompiani): By means of models, charts, photographs, apparatuses, and the like, are indicated the contributions of the fathers of medical science, such as those of Galvani, Malpighi, Morgagni, Spallanzani, Leonardo da Vinci and Vesalius.

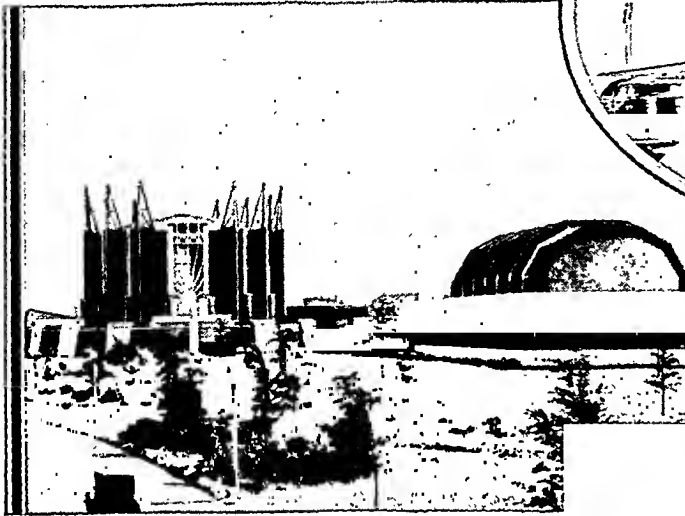


THE TRANSPARENT MAN
A Life Size Model Which Is Illuminated to Reveal the Positions
of All the Internal Organs

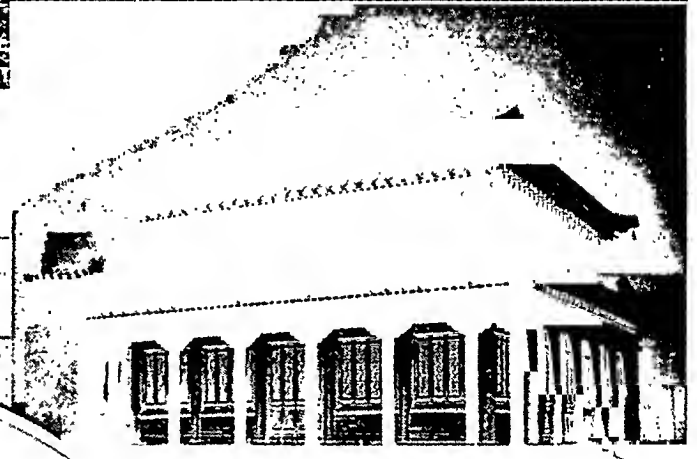
A CENTURY OF PROGRESS



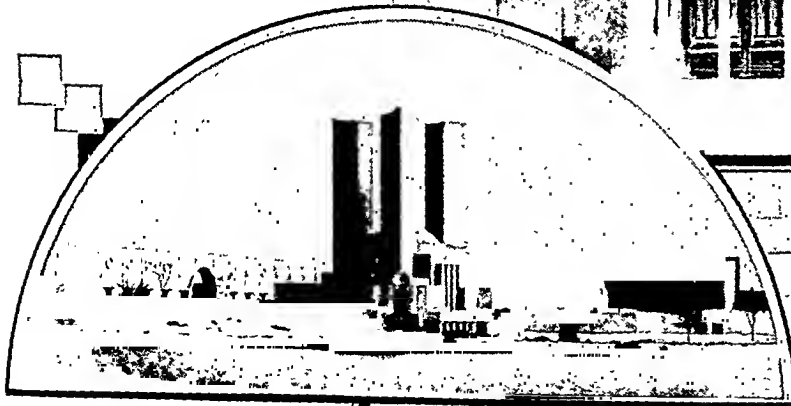
THE AGRICULTURAL BUILDING FOR EXHIBITS
OF FOOD PRODUCTION AND MERCHANDISING



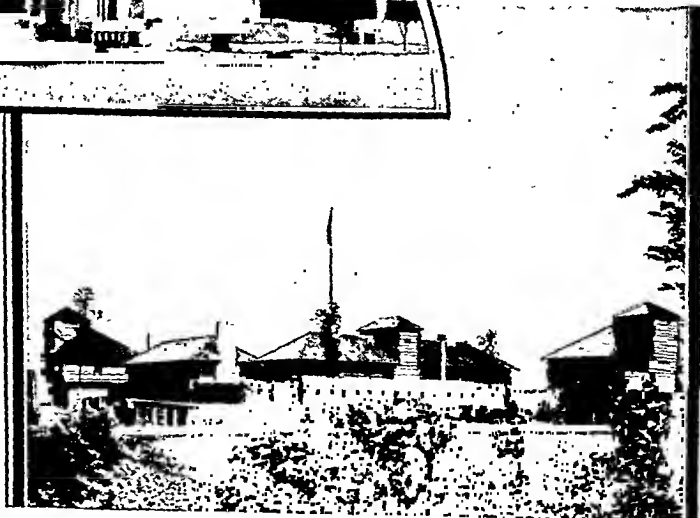
TRAVEL AND TRANSPORT BUILDING WITH
"SKY HUNG" DOME



THE GOLDEN ROOFED CHINESE
TEMPLE OF JEHO



THE FEDERAL BUILDING WITH
THREE TOWERS, REPRESENTING
ADMINISTRATIVE, LEGISLATIVE
AND JUDICIAL BRANCHES OF
DEMOCRACY

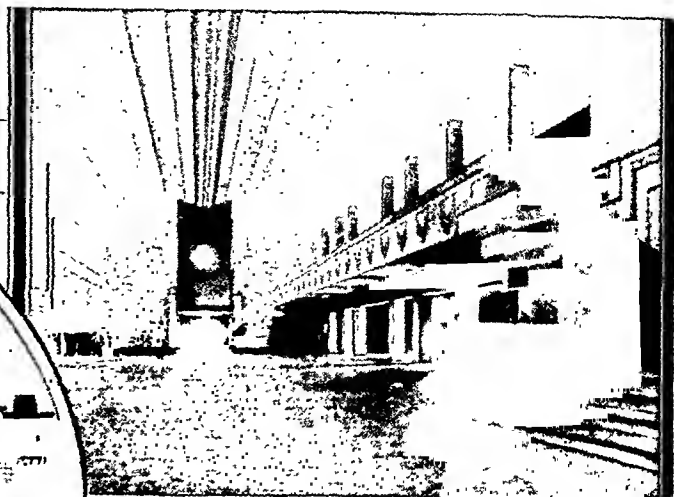


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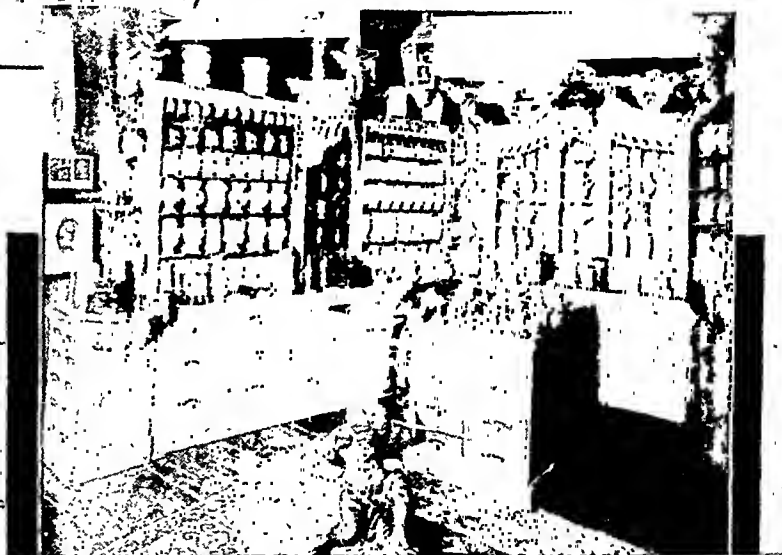
RECONSTRUCTION
OF
FORT DEARBORN



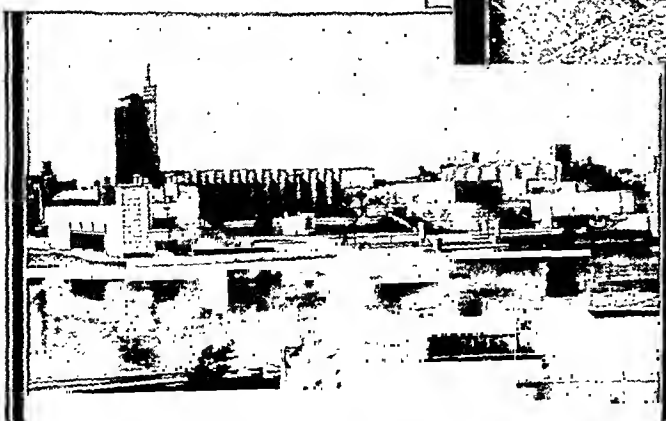
A VISTA IN LIGHT SEEN FROM
NORTHERLY ISLAND



THE GREAT HALL
FOR
EXHIBITS OF PURE SCIENCE

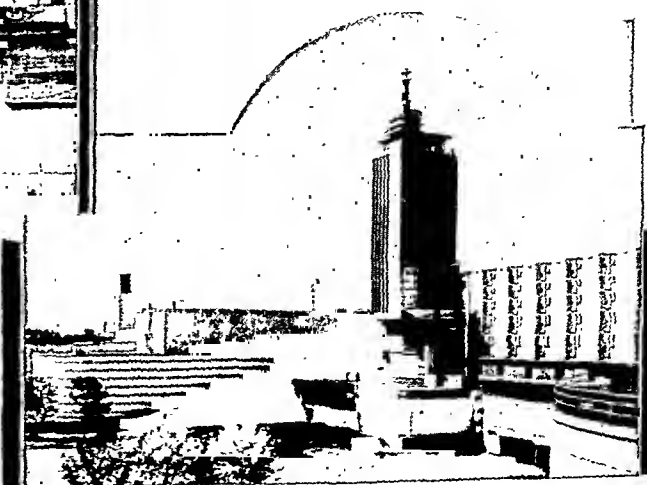


A MEDIEVAL PHARMACY EXHIBIT BY
E. R. SQUIBB & SONS



THE FACADE OF THE HALL OF SCIENCE VIEWED
FROM SOLDIERS' FIELD

At Right—THE COURT OF
THE HALL OF SCIENCE



Austria.—Medical exhibits from the Austrian government (Miller zu Aichholz): Photographs, drawings, models and charts are used to show the work of Austrian scientists, with emphasis on the work of Semmelweis.

Holland.—CENTRAL INSTITUTE FOR BRAIN RESEARCH, Amsterdam (C. U. A. Kappers): With the aid of specimens, models, casts, charts and drawings, the structure and function of the nervous system are demonstrated.

Canada.—MCGILL UNIVERSITY FACULTY OF MEDICINE, Montreal (C. F. Martin): Through the help of murals, transparencies and photographs are portrayed the history of James McGill and his university; the founders of the Montreal Medical Institution in 1823, and the development of the Montreal General Hospital and Osler's work there in 1881. A picture of the world's first surgical roentgenogram, taken at McGill University two months after Roentgen announced his discovery in 1895, is displayed. The life and work of Sir William Osler is represented. In the center of the booth is an illuminated panoramic view of McGill University of today.

UNITED STATES EXHIBITS OF MEDICAL SCIENCE

AMERICAN COLLEGE OF SURGEONS (Franklin Martin): By means of transparencies, models, dioramas, illustrated maps, photographs and replicas, the progress of hospitals and surgery in America during the past century is depicted. A replica of the Lister exhibit in the Wellcome Historical Medical Museum is displayed. This consists of a diorama of the Lister Ward at the Glasgow Infirmary; photographs of Lister, his family, his degrees, letters patent, records, and the like; in showcases are displayed his pioneer experimental work on antiseptics and appliances used by him, and also replicas of furniture used by him.

AMERICAN COMMITTEE FOR THE CONTROL OF RHEUMATISM (Ralph Pemberton and R. B. Osgood): Specimens, photographs, models, apparatus, roentgenograms and charts are displayed on the causes, treatment and prevention of arthritis.

AMERICAN LIBRARY ASSOCIATION, Hospital Division (C. B. Roden): A model hospital library in miniature is shown under the auspices of the Hospital Libraries Committee. An electrically operated book wagon, guided by a "hospital librarian," makes the tour of a "ward" so that visitors to the exposition may see just how book service to patients is given.

AMERICAN MEDICAL ASSOCIATION (T. G. Hull): Dioramas, mechanical displays and transparencies are used to demonstrate progress in (1) medical practice, (2) medical care, (3) medical education, and (4) health education. Bas-relief statuary portrays Asclepius, the god of medicine; Hygieia, the goddess of health, and Hippocrates, often called the father of medicine. There are contrasted the difficulties of the saddle-bag doctor with those of the physician of today with his numerous facilities. The many medical discoveries of the past century shown in brief review emphasize this point. It is also portrayed how a frequent physical examination tends toward good medical care and how self diagnosis and self medication result in poor medical care. A relief map of the United States has actual reproductions in miniature of the medical schools of the country. The rôle of the modern hospital as a place to which people now go to get well or to maintain their health is contrasted with that of a century ago.

AMERICAN PHARMACEUTICAL ASSOCIATION (H. C. Christensen): This exhibit is divided into historical, educational and professional aspects. In the center is a replica of the famous Ebers papyrus, 1550 B. C., and consists of 110 pages describing about 700 different remedies for human diseases. There are several displays of actual specimens illustrating the development of natural forms of materials of mineral, vegetable and animal origin to the finished medicinal products. There is a reproduction of an old-time pharmacy. A museum type of display of utensils, show globes, shelf bottles, crude drugs, primitive drugs and drug materials is presented. A model of the pharmacy headquarters building, the National Institute of Pharmacy, now being erected in Washington, D. C., is exhibited. An actual demonstration of prescription compounding, assays, chemical tests, and the like, showing the professional service which pharmacy renders to the public, is provided. A modern, completely equipped combination prescription and

chemical laboratory is contrasted with a replica of the 1842 pharmacy of Philo Carpenter at 143 Lake Street, Chicago, known as the "Checkered Drug Store."

AMERICAN SOCIETY FOR THE CONTROL OF CANCER (A. H. Estabrook): The purpose of this exhibit is to demonstrate the fact that cancer, if discovered and treated in the early stages of the disease, is to a great extent curable. In a mechanical unit, cancer is compared to a fire: Cancer in its earlier stages, like a small fire, can be controlled; but in its late stages, like a huge conflagration, there is little hope for control. Material on the nature, incidence, prevention and treatment of cancer is presented in four dioramas. Models, drawings and charts are used to present the need of attention to all the early symptoms of cancer. The history of the treatment from ancient times and the present methods of treatment by surgery, x-rays and radium are depicted.

AMERICAN UROLOGICAL ASSOCIATION (R. H. Herbst and H. S. Kretschmer): With the assistance of drawings, charts and models is emphasized the need of consulting a physician when blood and pus are in the urine. Tuberculosis, tumors, stones of the urinary tract and disease of the prostate gland are developed in a general way with a panel devoted to each disorder. The development of urologic instruments is presented, with the aid of Mueller of Chicago.

CLEVELAND CLINIC FOUNDATION (George Crile): Motion pictures present the discovery of the circulation of the blood by Harvey in 1628, the development of modern methods of transfusion and the formation of autogenous cells. The history of blood transfusion is shown by the use of actual instruments, with the aid of Mueller of Chicago and Kimpton of Boston. The physiologic interrelations of the thyroid, suprarenal, pituitary and sex glands are illustrated by specimens, charts, models and drawings. The history of the roentgen ray consists of an x-ray apparatus and tube used in 1896 and a number of roentgenograms, books and tubes made within a few weeks after the discovery of the x-rays in 1895. On a mechanical device, a number of pictures are shown in succession which will contrast early and present day x-ray tubes, apparatus and pictures.

CHICAGO BOARD OF HEALTH (H. N. Bundesen): With apparatus, stereopticon lantern slides, charts and diagrams, the history of the control of preventable diseases in Chicago during the last hundred years is disclosed. Health educational work along various lines is indicated.

CHICAGO CENTENNIAL DENTAL CONGRESS (Arthur Black): The dental exhibit is divided into historical, scientific and educational sections. With the aid of motor-driven mechanical devices, motion pictures, charts, models, transparencies, and actual specimens, the progress of dentistry in the past hundred years is portrayed. Dental development is illustrated by an exhibit of the equipment of the itinerant dentist of 1833 and a fully equipped operating room of the period of 1883. Conditions at these early times are contrasted with those of today. The interesting relationship of Paul Revere and George Washington to dentistry will be presented. Progress in the manufacture of dental equipment is displayed. Dental conditions in relation to general health are a prominent feature. The cooperation of the S. S. White Dental Manufacturing Company and the Ritter Dental Manufacturing Company makes possible an extensive and popular presentation of dentistry. The education of the dentist is illustrated on a large electrically illuminated panel.

CHICAGO GOODWILL INDUSTRIES (W. C. Loague): The equipment consists of a large floor loom, table loom, bicycle saw, work bench and table. These pieces are arranged in a semicircle and will constitute the major part of the display to demonstrate treatment. Patients from the Goodwill Workshop receive this treatment under supervision two hours daily.

CHICAGO MEDICAL, DENTAL AND ALLIED SCIENCE WOMEN'S ASSOCIATION (Lena K. Sadler and Bertha Van Hoosen): By means of an automatically operated book 6 feet high and 4 feet wide, there are questions and answers on maternal hygiene. With the aid of artistic paintings and models, the relation of food, clothing and appropriate environment for the expectant mother is shown.

CHICAGO MUNICIPAL TUBERCULOSIS SANITARIUM (A. J. Hruby): The central object of the exhibit is a mural in oil, 8 by 5 feet, of the "Sower of Seed." The sower is represented as an individual with advanced tuberculosis who spreads this disease to all with whom he comes in contact. The theme of the whole exhibit portrays tuberculosis as an infectious and contagious disease. Charts, models, roentgenograms and bacteriologic specimens are used to emphasize this theme.

CHICAGO TUBERCULOSIS INSTITUTE (Mrs. T. B. Sachs): The history of the fight against tuberculosis is represented in this display.

CHICAGO MEDICAL SOCIETY and WOMAN'S AUXILIARY (C. H. Phifer and Sophia Brumbach): The history of the Chicago Medical Society and related medical progress in Chicago is presented. Desks for registration of visiting physicians and members of the medical auxiliary are provided.

HARVARD UNIVERSITY and the MASSACHUSETTS GENERAL HOSPITAL (Reginald Fitz): The historical contributions are: the beginning of Harvard Medical School, 1782; the contributions of Oliver Wendell Holmes; the introduction of physiology to the Harvard Medical School by Professor Bowditch, and the discovery of appendicitis by R. H. Fitz. The use of ether by Warren and Morton in 1846 is represented by a small diorama. Contributions from the Massachusetts General Hospital from 1822 to 1930 are displayed on the development of abdominal surgery, the high caloric treatment of typhoid, introduction of social service, the discovery of the blood platelets, the origin of cardiac surgery and the liver diet treatment of pernicious anemia by Minot and Murphy. The exhibit is composed of portraits, monographs, prints, photographs, books and instruments.

LOYOLA UNIVERSITY OF CHICAGO (J. M. Essenberg): This exhibit is designed to show the make up of the most complicated of all organisms, the human body. Sections through all parts are displayed, and there are three series of these representing planes at right angles to each other. Every organ of considerable size is shown, and colors are added to make structures easier to distinguish. Each section is mounted in a specially designed aluminum case with glass on both sides.

MARQUETTE UNIVERSITY and the MILWAUKEE COUNTY HOSPITAL (Francis Murphy and Joseph Grill): This exhibit on Bright's disease is demonstrated by specimens of both injected and noninjected kidneys, by charts and by photomicrographs. The central part of the exhibit is a history of Richard Bright, Guy's Hospital, London, with monographs of his publications in 1827 and 1833. The portraits of the leading contributors, beginning with Bright, are presented. The differences between glomerular nephritis, nephrosis and the arteriosclerotic kidney are emphasized. The relation between acute infections such as scarlet fever, tonsillitis and infections of the ear to the inflammation of the kidneys is demonstrated.

MATERNITY CENTER ASSOCIATION OF NEW YORK (Hazel Corbin): By means of charts, diagrams and models, this exhibit emphasizes the importance of prenatal and postnatal care.

MAYO FOUNDATION (Walter Alvarez): This institution is developing three themes; namely, diseases of the digestive tract, the thyroid gland, and the sympathetic nervous system. The information is presented with the help of transparent photographs, wax models, charts, motion pictures and lantern slides. A model of an x-ray laboratory and of Dr. Cannon of Harvard, in 1896, making the first x-ray studies of the stomach are shown. A collection of roentgenograms, wax models and actual gallstones illustrates the commoner lesions of the digestive tract, and a diagrammatic model of the stomach and the intestine indicates the situation of these lesions in the body. A large model of the thyroid gland in wax and seven life-like wax masks display the appearance of patients with the different types of goiter and thyroid gland deficiency. The successive stages are shown in the extraction of a few grains of thyroxine, the active constituent of the thyroid gland, from 25 pounds of raw material. Large transparent photographs of dissections of the sympathetic nervous system are presented so as to orient the lay visitor. A large electrical thermometer enables visitors to measure the temperature of their hands and an electric tremometer enables them to see how steady their nerves are.

MILWAUKEE PUBLIC MUSEUM (S. A. Barrett): A large central diorama showing the lodge of an Indian medicine man in the midst of a ceremonial scene emphasizes the ritual among the Indians of primitive medicine. Samples of Indian herbs used for medicine and the charms and amulets indicate the esoteric medicine of the Indians.

NEW YORK CITY CANCER COMMITTEE (Ella H. Rigney): With the help of charts, diagrams and drawings, the cause, treatment and prevention of cancer are presented.

ORTHO S. A. SPRAGUE MEMORIAL INSTITUTE, University of Chicago (Maud Slye): The general aim of this exhibit is to reveal that it is possible for genetics to be of tremendous value in relation to cancer. By means of charts, models and diagrams, the results of a twenty-three year study on more than 110,000 necropsies on mice are described. There are genealogical charts of families of mice which are the model for charts for human families. A projection lantern shows slides of the cancer tissues of various types and of various organs.

U. S. PUBLIC HEALTH SERVICE, Federal Building (J. G. Townsend): This extensive exhibit, occupying more than 2,500 square feet, shows the progress made in public health and sanitation since the establishment of the service and is presented in divisions as follows: the Marine Hospital Division; Division of Scientific Research; Division of Interstate Quarantine; Foreign and Insular Quarantine; Mental Hygiene; Venereal Diseases; Charts and Graphs; Miscellaneous. There is exhibited an old style medical kit and a modern ship's medicine chest. There are models of a modern milk plant and of an approved school room with all modern facilities. The recent work on pellagra, tularemia, undulant fever, typhus fever, spotted fever and psittacosis (parrot's disease) are clearly presented. The brilliant control of smallpox by vaccination since the time of Jenner, 1796, typhoid by inoculation and diphtheria by toxin-antitoxin are shown by charts, models and posters. There will be models of the septic tank and water purification plant, and of evolution of water containers on common carriers made by Dr. Crowder of the Pullman Company. By wax models, charts and photographs, the recent work on trachoma is presented. There are models of a disinfecting plant, a rat-proof wharf, a rat-proof warehouse, a rat-proof vessel, and a large map of the Western Hemisphere showing airplane routes to the United States, time of flight and infected yellow fever areas. There is a large illuminated world map showing the incidence and death rate of smallpox and the practical obliteration of this disease by vaccination.

UNIVERSITY OF CHICAGO (E. L. Compere): The object of this exhibit is the rehabilitation of the crippled child. The scientific part emphasizes the development, structure, function and derangement of the human spine, with particular emphasis on the disks found between the vertebrae. With the aid of models, photographs, roentgenograms and photomicrographs, the scientific evidence is presented. In a diorama are shown the surgical procedures that are practiced by the southwest Indians of the United States. In another diorama, a modern orthopedic ward of six beds is presented. By motion pictures, the results of treatment of acute anterior poliomyelitis are projected for the observer.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, COLLEGE OF DENTISTRY, DEPARTMENT OF ANIMAL HUSBANDRY, and the ILLINOIS DEPARTMENT OF PUBLIC HEALTH (D. J. Davis and Tom Jones): This exhibit constitutes 2,200 square feet and is composed of dioramas, models, transparencies, charts, drawings and specimens showing the relation of focal infections to systemic diseases, hay fever, tuberculosis, pneumonia, hemophilia and rabies. The Illinois Department of Public Health has dioramas on milk production and distribution, contrasting insanitary methods with modern sanitary ones. Health conditions of a hundred years ago are shown in contrast with those of the present day, bringing out the effective means employed of purifying the water supply and of the disposal of waste material.

UNIVERSITY OF WISCONSIN (C. R. Bardeen): Beaumont exhibit of books, photostats, photographs and charts of the epoch-making work on gastric digestion published in 1833. This is the centennial of the publication of the work of the first American physiologist, conducted on the French voyageur Alexis St. Martin, who had a permanent gastric fistula, the

result of an accidental gunshot wound. This investigation was conducted in the territory of Wisconsin and Michigan.

MEDICAL INDUSTRIES

The medical industries of the United States are telling stories of the scientific advancement of medicine rather than a mere display of products. This type of exhibit is interesting and profitable in the long run to the exhibitor as well as to the observer. A few of the themes that will be developed by the exhibiting firms are: the story of the control of pain; the story of the doctor's service to the sick, shown by a large diorama; the story of antiseptics and asepsis in surgery, or the control of infections; the story of extension and clarification of man's vision, by means of the microscope and eye glasses; the story of the vitamins or the accessory food substances that man needs to prevent and cure deficiency diseases; the story of the chemical messengers in the blood stream, or the hormones that regulate the body by chemical means and which in normal amounts prevent certain diseases and maintain health; the story of the saddle-bag doctor of a hundred years ago; the story of the x-rays, discovered by Roentgen; the story of infections of the teeth and the production of general diseases of the body; a complete medieval pharmacy. The medical industries that have signed contracts to date are: Abbott Laboratories; American Optical Company; Baker and Company; Bausch and Lomb Optical Company; Burroughs and Wellcome of New York; Bauer and Black; Bechstein-Moor; Chappel Brothers; Chicago Pharmacal Company; Cruver Manufacturing Company; Dentists Supply Company; Drucker Company; Eastman Kodak Company; Foxboro Company; Gaertner Scientific Company; General Electric X-Ray Corporation; Gerber Products Company; Hanovia Chemical Company; Heyden Chemical Company; Hild Company; Hynson,

Westcott and Dunning; Iodent Chemical Company; Keuffel and Esser; Long Company; Mallinckrodt Chemical Works; Merck & Co.; Petrolagar Laboratories; Ritter Dental Manufacturing Company; G. D. Searle Company; Simoniz Company; Squibb & Sons; Taylor Instrument Company; Union Carbide and Carbon Company; Victor Chemical Works; Vitamin Food Company; S. S. White Dental Manufacturing Company.

MEDICAL WEEK AT THE WORLD'S FAIR

The week following the annual session of the American Medical Association in Milwaukee has been designated as Medical Week by the officials of A Century of Progress. During this week the convention of the American Association for the Advancement of Science meets in Chicago. There is an exceptional opportunity, therefore, for those physicians who attend the Milwaukee session of the American Medical Association to devote two weeks to the opportunities presented by two scientific medical conventions and the exhibits at the Chicago World's Fair. The following foreign medical scientists have accepted invitations extended by A Century of Progress to read papers in the medical section of the American Association for the Advancement of Science: A. V. Hill, University College, London; R. Goldschmidt, Kaiser Wilhelm Institut, Berlin; August Krogh, University of Copenhagen; Joseph Barcroft, Cambridge University, England; Filippo Bottazzi, University of Naples; C. U. A. Kappers, Central Institute for Brain Research, Amsterdam; Constantin Levaditi, Institut Pasteur, Paris.

ATTRACTIVE RAILROAD RATES

Beginning May 25, all railroads will have round trip fare to Chicago for the rate of one fare plus 10 per cent from both Atlantic and Pacific seaboard and from the South.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF THE OPENING GENERAL MEETING

Plankinton Hall, Milwaukee Auditorium, Tuesday, June 13, 8 p. m.

Music.

Call to Order by the President, EDWARD H. CARY.

Invocation. THE RIGHT REVEREND BENJAMIN F. P. IVINS, Bishop of Milwaukee.

Address. HON. A. G. SCHMEDEMAN, Governor of Wisconsin.

Address. HON. DANIEL W. HOAN, Mayor of Milwaukee.

Address of Welcome. REGINALD H. JACKSON, President, State Medical Society of Wisconsin.

Address of Welcome. JAMES C. SARGENT, President, Medical Society of Milwaukee County.

Announcements. STANLEY J. SEEGER, Chairman, Local Committee on Arrangements.

Music.

Introduction and Installation of PRESIDENT-ELECT DEAN LEWIS, Baltimore.

Address. DEAN LEWIS.

Presentation of Medal to Retiring President, EDWARD H. CARY. A. R. MITCHELL, Chairman of the Board of Trustees.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order that will be followed in the Official Program, nor is the list complete. The Official Program will be similar to the programs issued in previous years and will contain the final program of each section with abstracts of the papers, as well as lists of committees, program of the Opening General Meeting, list of entertainments, map of Milwaukee, and other informa-

tion. To prevent misunderstandings and protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each Fellow on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN PLANKINTON HALL, MILWAUKEE AUDITORIUM

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Wednesday, June 14—9 a. m.

Myocardosis: Its Recognition and Therapy (Lantern Demonstration). WALTER L. BIERRING, Des Moines, Iowa.

Discussion to be opened by ALFRED FRIEDLANDER, Cincinnati; R. I. RIZER, Minneapolis, and CADIS PHIPPS, Boston.

Ten Years' Observation of Children with Rheumatic Heart Disease (Lantern Demonstration).

WILLIAM D. STROUD, Philadelphia; MELVILLE A. GOLDSMITH, Jenkintown, Pa.; D. STEWART POLK, Rosemont, Pa., and FRANCIS Q. THORP, Philadelphia.

Discussion to be opened by T. DUCKETT JONES and ALBERT G. YOUNG, Boston.

The Frank Billings Lecture. LEWIS A. CONNER, New York.

The Clinical Value of Studies of the Human Capillaries (Lantern Demonstration). IRVING S. WRIGHT, New York.

Discussion to be opened by SOMA WEISS, Boston.

The Systolic Murmur: Its Clinical Interpretation.

SAMUEL A. LEVINE, Boston.

Discussion to be opened by JAMES B. HERRICK, Chicago, and FRED M. SMITH, Iowa City.

Thursday, June 15—9 a. m.

The Treatment of the Anemia Associated with Disorders of the Liver: Its Response to Secondary-Anemia-Liver-Extract and Iron Therapy.

GARNETT CHENEY, San Francisco.

Discussion to be opened by WILLIAM P. MURPHY, Boston, and CYRUS C. STURGIS, Ann Arbor, Mich.

Hereditary Gaucher's Splenomegaly (Lantern Demonstration).

JOHN P. ANDERSON, Cleveland.

Discussion to be opened by NORBERT ENZER, Milwaukee.

The Treatment of Polycythemia (Lantern Demonstration).

C. T. STONE and MEYER BODANSKY, Galveston, Texas.

Discussion to be opened by MOSES BARRON, Minneapolis, and NATHAN ROSENTHAL, New York.

Experience with Administration of Yellow Bone Marrow in the Treatment of Various Forms of Granulocytopenia (Lantern Demonstration).

CHARLES H. WATKINS and HERBERT Z. GIFFIN, Rochester, Minn.

Discussion to be opened by H. N. HARKINS, Chicago.

Types of Chronic Arthritis (Lantern Demonstration).

RALPH A. KINSELLA, St. Louis.

Discussion to be opened by JAMES S. McLESTER, Birmingham, Ala.; WALTER BAUER, Boston, and ARCHER O'REILLY, St. Louis.

Friday, June 16—9 a. m.

Election of Officers

Late Results of Unoperated Gallbladder Disease (Lantern Demonstration).

J. M. BLACKFORD, Seattle.

Discussion to be opened by FRANK SMITHIES, Chicago, and JAMES F. WEIR, Rochester, Minn.

Hypertension, Obesity and Hyperglycemia (Lantern Demonstration).

JOHN H. MUSSER and D. O. WRIGHT, New Orleans.

Discussion to be opened by HENRY J. JOHN, Cleveland;

HUGO R. RONY, Chicago; FREDERICK A. WILLIUS, Rochester, Minn.; LEA A. RIELY, Oklahoma City;

FRANCIS D. MURPHY, Milwaukee; EMMETT F. HORINE, Louisville, Ky., and E. R. NUZUM, Santa Barbara, Calif.

Chairman's Address. REGINALD FITZ, Boston.

Pellagra: Review of Cases, with Special Reference to Gastric Secretions (Lantern Demonstration).

H. B. MULHOLLAND, University, Va.

Discussion to be opened by T. D. SPIES, Cleveland;

W. H. SEBRELL, JR., Washington, D. C., and JAMES S. McLESTER, Birmingham, Ala.

Primary Staphylococcus Pneumonia (Lantern Demonstration).

H. A. REIMANN, Minneapolis.

Discussion to be opened by RALPH A. KINSELLA, St. Louis; LEO G. RIGLER, Minneapolis, and W. D. SUTLIFF, Boston.

Extrapleural and Intrapleural Pneumolysis in the Treatment of Pulmonary Tuberculosis (Lantern Demonstration).

LE ROY S. PETERS, Albuquerque, N. M.

Discussion to be opened by J. A. MYERS, Minneapolis, and P. G. CORNISH, Albuquerque, N. M.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN ENGELMAN HALL, MILWAUKEE AUDITORIUM

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Wednesday, June 14—2 p. m.

The Prevention of Complications in Thyroid Surgery (Lantern Demonstration).

ARNOLD S. JACKSON, Madison, Wis.

Discussion to be opened by F. A. COLLIER, Ann Arbor, Mich., and ROBERT S. DINSMORE, Cleveland.

Cholechooduodenostomy and Gastro-Enterostomy for Chronic Biliary Stasis (Lantern Demonstration).

ALFRED A. STRAUSS, Chicago.

Discussion to be opened by J. TATE MASON, Seattle, and

WALTMAN WALTERS, Rochester, Minn.

The Aseptic Tannic Acid Treatment of Diffuse Superficial Burns (Lantern Demonstration).

DONALD B. WELLS, Hartford, Conn.

Reconstruction of the Burned Face (Lantern Demonstration).

H. L. UPDEGRAFF, Hollywood, Calif.

Discussion on papers of Drs. WELLS and UPDEGRAFF to be opened by S. J. SEEGER, Milwaukee, and FERRIS SMITH, Grand Rapids, Mich.

Symptoms of Spinal Cord Injury: Treatment and Results in Sixty Cases of Spinal Cord Injury (Lantern Demonstration).

STUART W. HARRINGTON, Rochester, Minn.

Discussion to be opened by P. E. TRUESDALE, Fall River, Mass., and C. A. HEDBLOM, Chicago.

The Relative Merits of Spinal and Inhalation Anesthesia (Lantern Demonstration).

HAROLD L. FOSS, Danville, Pa.

Discussion to be opened by JOHN S. LUNDY, Rochester, Minn., and GEORGE W. CRILE, Cleveland.

Thursday, June 15—2 p. m.

The Incidence and Prevention of Incisional Hernias (Lantern Demonstration).

HENRY W. CAVE, New York.

Discussion to be opened by AMOS R. KOONTZ, Baltimore, and ROBERT L. PAYNE, Norfolk, Va.

Removal of the Right Cerebral Hemisphere: Presentation of a Case (Lantern Demonstration).

W. JAMES GARDNER, Cleveland.

Discussion to be opened by WINCHELL McK. CRAIG, Rochester, Minn., and W. E. DANDY, Baltimore.

Chairman's Address: The Curability of Cancer of the Colon, Rectosigmoid and Rectum (Lantern Demonstration).

FRED W. RANKIN, Lexington, Ky.

Esophageal Diverticulum (Lantern Demonstration).

FRANK H. LAHEY, Boston.

Discussion to be opened by C. T. STURGEON, Los Angeles, and ROY D. McCLURE, Detroit.

Surgical Indications in Bronchiectasis (Lantern Demonstration).

NORMAN S. SHENSTONE, Toronto, Canada.

Discussion to be opened by C. A. HEDBLOM, Chicago, and JOHN ALEXANDER, Ann Arbor, Mich.

Results of Surgery in Spina Bifida (Lantern Demonstration).

ANATOLE KOLODNY, Sioux City, Iowa.

Discussion to be opened by W. JAMES GARDNER, Cleveland, and HARRY E. MOCK, Chicago.

Friday, June 16—2 p. m.

Election of Officers

The Diagnosis and Treatment of Postoperative Pulmonary Complications (Lantern Demonstration).

GABRIEL TUCKER, Philadelphia.

Discussion to be opened by E. P. PENDERGRASS and E. L. ELIASON, Philadelphia.

Congenital Obstruction of the Small Intestine (Lantern Demonstration).

WILLIAM E. LADD, Boston.

Discussion to be opened by ALBERT H. MONTGOMERY, Chicago, and WARREN H. COLE, St. Louis.

The Indications for Enterostomy (Lantern Demonstration).

THOMAS G. ORR, Kansas City, Mo.

Discussion to be opened by W. D. GATCH, Indianapolis, and J. SHELTON HORSLEY, Richmond, Va.

The Treatment of Acute Intestinal Obstruction by Suction with the Duodenal Tube (Lantern Demonstration).

O. H. WANGENSTEEN and JOHN R. PAINE, Minneapolis.

Discussion to be opened by ERWIN R. SCHMIDT, Madison, Wis., and KARL A. MEYER, Chicago.

The Surgical Relief of Intractable Pain (Lantern Demonstration).

LOYAL DAVIS, Chicago.

Discussion to be opened by MAX M. PEET, Ann Arbor, Mich., and JOHN L. GARVEY, Milwaukee.

Eventual Results of Gastric Surgery (Lantern Demonstration).

ERNEST H. GAITHER, Baltimore.

Discussion to be opened by J. SHELTON HORSLEY, Richmond, Va., and FRANK H. LAHEY, Boston

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN ENGELMAN HALL, MILWAUKEE AUDITORIUM

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Wednesday, June 14—9 a. m.

Preconceptional and Prenatal Influences Affecting the New-Born (Lantern Demonstration).

LEE BIVINGS, Atlanta, Ga.

Discussion to be opened by FRED L. ADAIR, Chicago.

Carbon Dioxide and Oxygen in Obstetrics.

W. T. MCCONNELL and ROLAND L. MCCORMACK, Louisville, Ky.

Discussion to be opened by WALTER M. BOOTHBY, Rochester, Minn.

Infiltration Versus Spinal Anesthesia in Obstetrics and Gynecology (Lantern Demonstration).

J. P. GREENHILL, Chicago.

Discussion to be opened by JOSEPH B. DE LEE, Chicago.

Management of the Third Stage of Labor (Lantern Demonstration).

LEROY A. CALKINS, Kansas City, Mo.

Discussion to be opened by JENNINGS C. LITZENBERG, Minneapolis.

Abdominal Pain in Pregnancy (Lantern Demonstration).

STUART B. BLARELY, Binghamton, N. Y.

Discussion to be opened by RAE T. LA VAKE, Minneapolis.

Does Quinine as Used in Induction of Labor Have a Deleterious Effect on the Fetus? EDWARD L. KING, New Orleans.

Discussion to be opened by F. H. FALLS, Chicago.

Thursday, June 15—9 a. m.

Gestational Polyneuritis (Motion Picture Demonstration).

E. D. PLASS, Iowa City.

Discussion to be opened by RALPH H. LUKART, Omaha.

Fetal Mortality in the Toxemias of Pregnancy (Lantern Demonstration).

C. H. PECKHAM, Baltimore.

Discussion to be opened by JOHN W. HARRIS, Madison, Wis.

Chairman's Address. BARTON COOKE HIRST, Philadelphia.

Fetal Risks in the First Stage of Labor from Umbilical Cord Complications.

JOHN P. GARDINER, Toledo, Ohio.

Discussion to be opened by W. W. BRAND, Toledo, Ohio, and WILLIAM J. DIECKMAN, Chicago.

Minimum Theelin Dosage Necessary to Stimulate Endometrial Changes in Castrated Women (Lantern Demonstration).

AUGUST A. WERNER, St. Louis.

Discussion to be opened by EMIL NOVAK, Baltimore.

Friday, June 16—9 a. m.

Election of Officers

Crises of the Female Pelvis: Treated by the General Surgeon (Lantern Demonstration).

EMERY MOORE FITCH, Claremont, N. H.

Discussion to be opened by JOHN F. GILE, Hanover, N. H.

Cancer-Like Lesions of the Uterine Cervix (Lantern Demonstration).

RICHARD W. TELINDE, Baltimore.

Discussion to be opened by GEORGE H. GARDNER, Chicago.

Posture and Dysmenorrhea: Report on a Four Year Study on 302 Young Women (Lantern Demonstration).

NORMAN F. MILLER, Ann Arbor, Mich.

Discussion to be opened by CARL HENRY DAVIS, Milwaukee, and JOSEPH L. BAER, Chicago.

Management of Chronic Pelvic Infection (Lantern Demonstration).

VIRGIL S. COUNSELLER, Rochester, Minn.

Discussion to be opened by GEORGE GELLHORN, St. Louis, and FRANCIS W. SOVAK, New York.

Relief of Pelvic Pain by Sympathetic Neurectomy (Lantern and Motion Picture Demonstration).

FREDERICK S. WETHERELL, Syracuse, N. Y.

Discussion to be opened by WALTER T. DANNREUTHER, New York.

Colpectomy (Lantern Demonstration).

HAROLD E. SIMON, Birmingham, Ala.

Discussion to be opened by JAMES C. MASSON, Rochester, Minn.

SECTION ON OPHTHALMOLOGY

MEETS IN KILBOURN HALL, MILWAUKEE AUDITORIUM

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Wednesday, June 14—2 p. m.

Chairman's Address. FREDERICK H. VERHOEFF, Boston.

The Effect of Tryparsanide on the Eye (Lantern Demonstration).

N. K. LAZAR, Chicago.

Discussion to be opened by JOHN H. STOKES, Philadelphia.

The Ciliary Processes and Their Relation to Intra-Ocular Surgery (Lantern Demonstration).

ALGERNON B. REESE, JR., New York.

Discussion to be opened by WILLIAM C. FINNOFF, Denver.

Practical Lenses: A Trial Set. EDWARD JACKSON, Denver.

Discussion to be opened by WILLIAM E. SHAHAN, St. Louis.

The Clinical Implications of Ocular Disturbances Produced in Experimental Animals by Dietary Changes (Lantern Demonstration).

ARTHUR M. YUDKIN, New Haven, Conn.

Discussion to be opened by C. S. O'Brien, Iowa City.

Standards and Licensure in Ophthalmology.

WILLIAM H. CRISP, Denver.

Discussion to be opened by T. B. HOLLOWAY, Philadelphia.

The Function of the Reattached Retina (Lantern Demonstration).

PETER C. KRONFELD, Chicago.

Discussion to be opened by HUGH S. McKEOWN, New York.

Thursday, June 15—2 p. m.

Demonstration Session: Exhibition of New Instruments and Appliances

Critical Analysis and Comparison of Two Hundred Consecutive Cases of Cataract Intracapsular and Extracapsular Extraction (Lantern Demonstration).

HARRY S. GRADLE, Chicago.

Discussion to be opened by ARNOLD KNAPP, New York.

Cataract Complications in Relation to Intra-Ocular Tension and Blood Pressure: A Study of 2,200 Cataract Extractions (Lantern Demonstration).

OSCAR B. NUGENT, Chicago.

Discussion to be opened by JOHN GREEN, St. Louis.

A Study of the Possibilities of Orthoptic Training: Preliminary Report (Lantern Demonstration).

GEORGE P. GUIBOR, Chicago.

Discussion to be opened by LUTHER C. PETER, Philadelphia; DAVID W. WELLS, Boston, and SANFORD R. GIFFORD, Chicago.

The Arterioles of the Retina in Toxemia of Pregnancy (Lantern Demonstration).

HENRY P. WAGENER, Rochester, Minn.

Discussion to be opened by ROBERT J. MASTERS, Indianapolis.

Spontaneous Dislocation of the Lacrimal Glands (Lantern Demonstration).

JAMES W. SMITH, New York.

Discussion to be opened by F. HERBERT HAESSLER, Milwaukee.

On Mixed (Teratoid) Tumors of the Lacrimal Caruncle (Lantern Demonstration).

DERRICK T. VAIL, JR., Cincinnati.

Discussion to be opened by THOMAS D. ALLEN, Chicago.

Visual Field Studies in Functional Headaches of Pituitary Origin.

A. BEULAH CUSHMAN, Chicago.

Discussion to be opened by CLIFFORD B. WALKER, Los Angeles.

Friday, June 16—2 p. m.

Executive Session**Election of Officers**

The National Society for the Prevention of Blindness—A Lay Movement for the Conservation of Vision.

WILLIAM CAMPBELL POSEY, Radnor, Pa., and LEWIS H. CARRIS, New York.

Discussion to be opened by W. H. WILDER, Chicago, and CONRAD BERENS, New York.

A Study of Conjunctival Capillaries (Lantern Demonstration).

A. D. RUEDEMANN, Cleveland.

Discussion to be opened by ARTHUR J. BEDELL, Albany, N. Y.

The O'Connor Cinch Shortening Operation for Heterotropia and Heterophoria: A Critical Survey (Lantern Demonstration).

GEORGE N. HOSFORD and AVERY M. HICKS, San Francisco.

Discussion to be opened by WILLIAM F. HARDY, St. Louis.

Pocket-Flap Sclerecto-Iridodialysis in Glaucoma (Lantern Demonstration).

CHARLES N. SPRATT, Minneapolis.

Discussion to be opened by W. B. LANCASTER, Boston.

Ectopia Lentis, with Case Report of Total Dislocation, Directly Downward.

WARREN D. HORNER and SOL MAISLER, San Francisco.

Discussion to be opened by WILLIAM ZENTMAYER, Philadelphia.

SECTION ON LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

MEETS IN KILBOURN HALL, MILWAUKEE AUDITORIUM

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Wednesday, June 14—9 a. m.

Chairman's Address (Lantern Demonstration).

HARRIS P. MOSHER, Boston.

The Present-Day Surgery of Brain Abscess of Otitic Origin.

HARRY P. CAHILL, Boston.

Discussion to be opened by A. W. ANSON, Rochester, Minn.; R. EUSTACE SEMMES, Memphis, Tenn., and W. JAMES GARDNER, Cleveland.

Some of the Fundamental Principles of Functional Hearing Tests and Some Recent Developments in Tuning Forks and Sounding Rods.

ROBERT SONNENSCHNEIN, Chicago.

Discussion to be opened by WALTER H. THEOBALD, Chicago; HORACE NEWHART, Minneapolis, and EDMUND P. FOWLER, New York.

The Psychology of Progressive Deafness.

GORDON BERRY, Worcester, Mass.

Discussion to be opened by AUSTIN A. HAYDEN and GEORGE E. SHAMBAUGH, JR., Chicago, and JOHN F. CURTIN, Minneapolis.

The Future Market for Medical Service.

C. E. COOPER, Denver.

Discussion to be opened by W. P. WHERRY, Omaha; BURT R. SHURLY, Detroit, and W. W. PEARSON, Des Moines, Iowa.

The Anatomic Contributions of Dr. Mosher.

GEORGE E. HOURN, St. Louis.

Discussion to be opened by GREGOR W. MCGREGOR, Toronto, Canada; WILLIAM V. MULLIN, Cleveland, and THOMAS E. CARMODY, Denver.

Thursday, June 15—9 a. m.

The Surgical Importance of the Laryngeal Nerves in Relation to the Thyroid Arteries, Thyroid Gland and Larynx (Lantern Demonstration).

EDWARD F. ZIEGELMAN, San Francisco.

Discussion to be opened by WILLIAM A. KENNEDY, St. Paul; ROBERT S. DYNMORE, Cleveland; DAVID D. BERLIN, Boston, and JUSTUS MATTHEWS, Minneapolis.

Mediastinitis: A Clinical Study with Practical Anatomic Considerations of the Neck and Mediastinum.

A. C. FURSTENBERG, Ann Arbor, Mich.

Discussion to be opened by GEORGE W. CRILE, Cleveland; STUART W. HARRINGTON, Rochester, Minn., and THOMAS L. TOLAN, Milwaukee.

Pulmonary Complications of Esophageal Disease (Lantern and Motion Picture Demonstration).

CHEVALIER JACKSON and CHEVALIER L. JACKSON, Philadelphia.

Discussion to be opened by GABRIEL TUCKER, Philadelphia; JOHN B. POTTS, Omaha; SAMUEL IGLAUER, Cincinnati, and HERMAN J. MOERSCH, Rochester, Minn.

A Peculiar Form of Hyperplasia of the Mucous Membrane of the Upper Respiratory Tract (Lantern Demonstration).

HENRY B. ORTON, Newark, N. J.

Discussion to be opened by H. M. GOODYEAR, Cincinnati; IRA FRANK, Chicago, and JOHN J. SHEA, Memphis, Tenn.

The Involuntary Nervous System in Relation to Otolaryngology.

GORDON F. HARKNESS, Davenport, Iowa.

Discussion to be opened by DEAN M. LIERLE, Iowa City; JOHN W. CARMACK, Indianapolis; CARL L. LARSEN, St. Paul, and HOWARD C. BALLENGER, Chicago.

Friday, June 16—9 a. m.

Election of Officers

The Otorhinologic Aspects of Scarlet Fever (Lantern Demonstration).

GORDON D. HOOPLE, Syracuse, N. Y.

Discussion to be opened by IRVING I. MUSKAT and HORACE R. LYONS, Chicago; O. JASON DIXON, Kansas City, Mo., and EDWARD D. KING, Cincinnati.

Infection of the Blood Stream Associated with Suppuration in the Temporal Bone: A Clinical Study (Lantern Demonstration).

HAROLD I. LILLIE, Rochester, Minn.

Discussion to be opened by GEORGE M. COATES, Philadelphia; JAMES B. COSTEN, St. Louis, and SAMUEL J. KOPETZKY, New York.

Principles of Sinus Treatment in the Light of Physiologic Facts.

ARTHUR W. PROETZ, St. Louis.

Discussion to be opened by RALPH A. FENTON, Portland, Ore.; WALTER E. CAMP, Minneapolis; T. R. GITTINS, Sioux City, Iowa, and ANDERSON C. HILDING, Duluth, Minn.

The Treatment of Hay Fever by Alcohol Injections in the Nose (Lantern Demonstration).

HARRIS H. VAIL, Cincinnati.

Discussion to be opened by FRANK J. NOVAK, Chicago; VIRGIL J. SCHWARTZ, Minneapolis, and M. F. ARBUCKLE, St. Louis.

The Diagnosis and Treatment of Primary Malignant Conditions of the Maxillary Sinuses (Lantern Demonstration).

KARL MUSSER HOUSER and EUGENE P. PENDERGRASS, Philadelphia.

Discussion to be opened by M. R. GUTTMAN, Chicago; F. Z. HAVENS, Rochester, Minn., and EDWARD C. SEWALL, San Francisco.

SECTION ON PEDIATRICS

MEETS IN PLANKINTON HALL, MILWAUKEE AUDITORIUM

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Wednesday, June 14—2 p. m.

Chairman's Address: The First Half-Century of the Section on Pediatrics.

FREDERIC W. SCHLUTZ, Chicago.

Postvaccinal Encephalitis (Lantern Demonstration).

E. GORTER, Leyden, Holland.

BCG Investigation in New York City: The Safety and Immunizing Value of the Vaccine (Lantern Demonstration).

WILLIAM H. PARK, CAMILLE KERESZTURI and LUCY MICHELOW, New York.

Discussion to be opened by HORTON R. CASPARIS, Nashville, Tenn., and KARL E. KASSOWITZ, Milwaukee.

Limits of the Anti-Infective Value of Provitamin A (Carotene) (Lantern Demonstration).

S. W. CLAUSEN, Rochester, N. Y.

Discussion to be opened by WILLIAM WESTON, Columbia, S. C.; HENRY J. GERSTENBERGER, Cleveland, and I. NEWTON KUGELMASS, New York.

Acute Leukemia in Children (Lantern Demonstration).

JEAN V. COOKE, St. Louis.

Discussion to be opened by F. C. RODDA, Minneapolis.

The Normal Sleep Pattern for Children and the Factors That Can Derange Such Pattern (Lantern Demonstration).

CHARLES GLENVILLE GIDDINGS, JR., Atlanta, Ga.

Discussion to be opened by M. HINES ROBERTS, Atlanta, Ga.

Thursday, June 15—2 p. m.

Serum Phosphatase in Infants and Children as Influenced by Various Diseases and Conditions (Lantern Demonstration).

HENRY J. GERSTENBERGER, ARTHUR J. HOESH, G. RICHARD RUSSELL and EDNA E. CHAPMAN, Cleveland.

Discussion to be opened by J. R. GERSTLEY, Chicago.

Acute Transitory Cerebral Manifestations in Infants and Children (Lantern Demonstration).

ABRAHAM LEVINSON, Chicago.

Discussion to be opened by M. G. PETERMAN, Milwaukee.

Endemic Cerebrospinal Fever in Childhood (Lantern Demonstration).

E. B. SHAW and H. E. THELANDER, San Francisco.

Discussion to be opened by C. A. ALDRICH, Winnetka, Ill.; A. B. SCHWARTZ, Milwaukee, and JOSEPHINE B. NEAL, New York.

Lead Poisoning in Infants and Children (Lantern Demonstration).

CHARLES F. MCKHANN and EDWARD C. VOGT, Boston.

Discussion to be opened by R. A. Kehoe, Cincinnati; ROBERT A. STRONG, New Orleans, and KATSUJI KATO, Chicago.

Hypophyseal Infantilism (Lantern Demonstration).

E. KOST SHELTON and LYMAN A. CAVANAUGH, Santa Barbara, Calif., and HERBERT M. EVANS, New York.

Discussion to be opened by J. VICTOR GREENEBAUM, Cincinnati, and HERBERT M. EVANS, New York.

Estimation of Cardiac Area in Children (Lantern Demonstration).

PAUL C. HODGES, WRIGHT ADAMS, WAYNE GORDON and BENJAMIN W. ANTHONY, Chicago.

Discussion to be opened by JULIUS H. HESS, Chicago.

Friday, June 16—2 p. m.

Election of Officers

Electrocardiographic Studies During Pneumonia in Infants and Children (Lantern Demonstration).

ARTHUR F. ART and M. I. VINNECOUR, Chicago.

Discussion to be opened by LOUIS N. KATZ and STANLEY GIBSON, Chicago.

Birth Shock of the New-Born and Its Treatment (Lantern Demonstration).

I. NEWTON KUGELMASS, New York.

Discussion to be opened by L. R. DEBUYS, New Orleans, and RALPH M. TYSON, Philadelphia.

Heterologous Scarlet Fever (Lantern Demonstration).

JAMES D. TRASK and FRANCIS G. BLAKE, New Haven, Conn.

Discussion to be opened by JEAN V. COOKE, St. Louis.

A Clinical Study of Pulmonary Conditions Found in Children in the Chevalier Jackson Bronchoscopic Clinic (Lantern Demonstration).

RALPH M. TYSON, SAMUEL GOLDBERG and NATHANIEL M. LEVIN, Philadelphia.

Discussion to be opened by CHEVALIER JACKSON, Philadelphia, and A. GRAEME MITCHELL, Cincinnati.

Obstructive Laryngeal Dyspnea in Diphtheritic and Acute Infective Laryngitis (Lantern Demonstration).

E. S. PLATOU, Minneapolis.

Discussion to be opened by W. AMBROSE MCGEE, Richmond, Va., and KENNETH A. PHELPS, Minneapolis.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN NORTH SECTION, MARKET HALL, MILWAUKEE AUDITORIUM

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Secretary—C. H. GREENE, New York.

Executive Committee—R. M. WILDER, Rochester, Minn.; R. L. LEVY, New York; E. M. K. GEILING, Baltimore.

Wednesday, June 14—2 p. m.

The Dietary Treatment of Diseases of the Liver and Gallbladder (Lantern Demonstration).

J. RUSSELL TWISS and CARL H. GREENE, New York.

Clinical Manifestations of Hypermagnesemia and Hypomagnesemia and the Effects of Renal Insufficiency on the Action of Barbitals.

ARTHUR D. HIRSCHFELDER, Minneapolis.

Study of the Different Types of Edema and the Effect of Diuretics (Lantern Demonstration).

MELVIN W. BINGER and NORMAN M. KEITH, Rochester, Minn.

Discussion to be opened by M. HERBERT BARKER, Chicago.

Recent Studies on Toad Poisons (Lantern Demonstration).

K. K. CHEN, Indianapolis.

Discussion to be opened by L. G. ROWNTREE, Philadelphia, and WILLIAM S. MIDDLETON, Madison, Wis.

The Effect of Drugs on the Induced Standstill of the Human Heart (Lantern Demonstration).

M. H. NATHANSON, Minneapolis.

The Treatment of Filariasis. F. W. O'CONNOR, New York.

Thursday, June 15—2 p. m.

Chairman's Address (Lantern Demonstration).

E. M. K. GEILING, Baltimore.

The Relationship Between Active Principles of the Placenta and Pregnancy Blood and Urine, and Those of the Anterior Lobe of the Pituitary, as Indicated by Numerous Experiments on Hypophysectomized Animals (Lantern Demonstration).

J. B. COLLIP, Montreal, Canada.

Experimental Exophthalmos and Hyperthyroidism in Guinea-Pigs: Clinical Course, Pathology and Response to Iodides (Lantern Demonstration).

HARRY B. FRIEDGOOD, Baltimore.

Discussion to be opened by WALTER M. BOOTHBY, Rochester, Minn.

The Effects of Glycocoll in Muscular Dystrophy, with Especial Reference to Changes in Metabolism and in the Composition of Certain Voluntary Muscles.

J. G. REINHOLD, J. H. CLARK, G. R. KINGSLEY, W. A. WOLFF and J. W. MCCONNELL, Philadelphia.

The Treatment of Myasthenia Gravis with Glycine and Ephedrine (Lantern and Motion Picture Demonstration).

WALTER M. BOOTHBY, Rochester, Minn.

Discussion on paper of MR. REINHOLD, DR. CLARK, MR. KINGSLEY, DR. WOLFF and MCCONNELL and of DR. BOOTHBY to be opened by HARRIET EDGEWORTH, Tucson, Ariz.; L. G. ROWNTREE, Philadelphia, and FREDERICK P. MOERSCH, Rochester, Minn.

Insulin in the Treatment of Tuberculosis.

FREDERICK M. ALLEN, Morristown, N. J.

Friday, June 16—2 p. m.

Election of Officers

SYMPOSIUM ON THE TREATMENT OF ACUTE INFECTIOUS DISEASES

Therapeutic Results with Scarlet Fever Antitoxin (Lantern Demonstration).

LUKE W. HUNT, Chicago.

Specific Treatment of Septic Infections, Particularly with Aid of Bacteriophages (Lantern Demonstration).

WARD J. MACNEAL, New York.

An Antiserum for the Treatment of Tularemia (Lantern Demonstration).

LEE FOSHAY, Cincinnati.

Immunization with *Bacillus Pertussis* Vaccine.

LOUIS W. SAUER, Evanston, Ill.

Discussion to be opened by RAYMOND P. SCHOWALTER, Milwaukee.

Problems Connected with the Etiology and Prophylaxis of Disease of Upper Respiratory Tract.

YALE KNEELAND, Jr., New York.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN NORTH SECTION, MARKET HALL,
MILWAUKEE AUDITORIUM

OFFICERS OF SECTION

Chairman—CLYDE BROOKS, New Orleans.

Vice Chairman—WILLIAM CARPENTER MACCARTY, Rochester, Minn.

Secretary—J. J. MOORE, Chicago.

Executive Committee—A. C. IVY, Chicago; J. H. BLACK, Dallas, Texas; CLYDE BROOKS, New Orleans.

Wednesday, June 14—9 a. m.

Benign Lesions of the Breast, Simulating Cancer: Diagnosis and Treatment (Lantern Demonstration).

MAX CUTLER, Chicago.

The Pathologic Physiology of Teratoma Testis (Lantern Demonstration).

R. S. FERGUSON, New York.

The Present State of Biopsy (Lantern Demonstration).

A. B. MCGRAW and F. W. HARTMAN, Detroit.

Strumi Ovari (Lantern Demonstration).

ALFRED PLAUT, New York.

Ovarian Tumors Producing Secondary Sex Changes (Lantern Demonstration).

EMIL NOVAK, Baltimore.

Leukemic Reticulo-Endotheliosis (Monocytic Leukemia) (Lantern Demonstration).

A. G. FOORD, Pasadena, Calif.

Discussion to be opened by ROY R. KRACKE, Emory University, Ga.

Thursday, June 15—9 a. m.

Chairman's Address: Nonspecific Protein Therapy (Lantern Demonstration).

CLYDE BROOKS, New Orleans.

A Comparison of the Therapeutic Value of Typhoid Protein and Histamine in Urgent Cases of Asthma (Lantern Demonstration).

N. F. THIBERGE, New Orleans.

The Present Status of Nonspecific Protein Therapy in Peptic Ulcer (Lantern Demonstration).

A. L. LEVIN, New Orleans.

The Physiology of Hyperpyrexia (Lantern Demonstration).

CLARENCE A. NEYMANN, Chicago.

Studies on Pollen and Pollen Extracts: The Chemical Nature of Pollen Allergens.

LEON UNGER, Chicago.

A Characterization of Pneumonia Due to Type III Pneumococcus and a Biologically Closely Related Strain Type VIII (Cooper) (Lantern Demonstration).

MAXWELL FINLAND, Boston.

Growing Tubercle Bacilli (Lantern Demonstration).

H. J. CORPER, Denver.

Friday, June 16—9 a. m.

Election of Officers

The Toxemias of Pregnancy: The Nitrogen Metabolism (Lantern Demonstration).

ALLAN WINTER ROWE, Boston.

Lipoid Nephrosis and Its Relation to Glomerular Nephritis (Lantern Demonstration).

E. G. BANNICK, Rochester, Minn.

Studies on Blood Sugar Values (Lantern Demonstration).

FRED C. KOCH, ELIZABETH M. KOCH and M. L. HATHAWAY, Chicago.

The Significance of the Iodine Content of Human Blood (Lantern Demonstration).

GEORGE M. CURTIS and FRANCIS J. PHILLIPS, Columbus, Ohio.

The Pathology of Medical Shock or Circulatory Collapse (Lantern Demonstration).

V. H. MOON, Philadelphia.

Postmortem Examinations: Method of Obtaining Permission (Lantern Demonstration).

WILLIAM J. HOFFMAN, New York.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN NORTH SECTION, JUNEAU HALL,
MILWAUKEE AUDITORIUM

OFFICERS OF SECTION

Chairman—GEORGE B. HASSIN, Chicago.

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Secretary—HENRY W. WOLTMAN, Rochester, Minn.

Executive Committee—WALTER FREEMAN, Washington, D. C.; FRANKLIN G. EBAUGH, Denver; GEORGE B. HASSIN, Chicago.

Wednesday, June 14—2 p. m.

Various Aspects of Seizure Graphs in Epilepsy (Lantern Demonstration).

THEODORA WHEELER, Chicago.

Discussion to be opened by ROLAND P. MACKAY and RICHARD B. RICHTER, Chicago.

A Critical Analysis of the Symptomatology of a Series of Verified Frontal Lobe Tumors.

CHARLES H. FRAZIER, Philadelphia.

Discussion to be opened by ALFRED W. ADSON, Rochester, Minn., and MAX PEET, Ann Arbor, Mich.

Meningiomas of the Sphenoidal Ridge (Lantern Demonstration).

PERCIVAL BAILEY, Chicago.

Discussion to be opened by CHARLES H. FRAZIER, Philadelphia.

The Surgical Treatment of Septic Meningitis (Lantern Demonstration).

ROLAND M. KLENNE, St. Louis.

Discussion to be opened by ALFRED W. ADSON, Rochester, Minn., and CLAUDE C. COLEMAN, Richmond, Va.

Facial Diplegia in Lymphatic Leukemia (Lantern Demonstration).

PAUL H. GARVEY and JOHN S. LAWRENCE, Rochester, N. Y.

Discussion to be opened by GEORGE B. HASSIN, Chicago.

Leukemic Changes in the Brain (Lantern Demonstration).

I. B. DIAMOND, Chicago.

Discussion to be opened by PAUL H. GARVEY, Rochester, N. Y., and RICHARD H. JAFFE, Chicago.

Lying Considered as a Problem That Concerns Physicians.

THEODORE DILLER, Pittsburgh.

Discussion to be opened by A. I. ROSENBERGER, Milwaukee, and LLOYD H. ZIEGLER, Albany, N. Y.

Thursday, June 15—2 p. m.

Chairman's Address: On So-Called Circulation of the Spinal Fluid (Lantern Demonstration).

GEORGE B. HASSIN, Chicago.

Hysterical Fugues: Report of Cases (Lantern Demonstration).

LLOYD H. ZIEGLER, Albany, N. Y.

Discussion to be opened by FREDERICK P. MOERSCH, Rochester, Minn.

Address.

S. A. K. WILSON, London, England.

Metabolic and Therapeutic Studies in the Myopathies with Special Reference to Glycine Administration (Lantern Demonstration).

MEYER M. HARRIS and ERWIN BRAND, New York.

Discussion to be opened by EDWIN G. ZABRISKIE, New York.

Results of Malaria Therapy in Neurosyphilis (Lantern Demonstration).

PAUL A. O'LEARY and ASHTON L. WELSH, Rochester, Minn.

Discussion to be opened by WALTER FREEMAN, Washington, D. C., and UDO J. WILE, Ann Arbor, Mich.

The Results of Treatment of the Neurologic Complications of Pernicious Anemia (Lantern Demonstration).

ROY R. GRINKER, Chicago.

Discussion to be opened by WALTER F. SCHALLER, San Francisco, and JOHN L. GARVEY, Milwaukee.

Acute Disseminated Encephalomyelitis: Its Clinical Manifestations.

RICHARD J. KARNOSH, Cleveland.

Discussion to be opened by HOWARD D. MCINTYRE, Cincinnati, and THEODORE T. STONE, Chicago.

Friday, June 16—2 p. m.

Election of Officers

The Pharmacologic Action of the Barbiturates and Their Value in Neuropsychiatric Conditions.

CARL P. WAGNER, Hartford, Conn.

Discussion to be opened by W. J. BLECKWENN, Madison, Wis.

The Mechanism of the Anxiety States: Its Importance in General Medicine.

TITUS H. HARRIS and ABE HAUSER, Galveston, Texas.

Discussion to be opened by WALTER C. ALVAREZ, Rochester, Minn., and FRANKLIN G. EBAUGH, Denver.

Generalized Edema Occurring Only at Menstrual Period (Lantern Demonstration). WILLIAM A. THOMAS, Chicago.

Discussion to be opened by EMIL NOVAK, Baltimore, and GEORGE W. HALL and EDWARD ALLEN, Chicago.

Neurosurgical Considerations of Malignant Metastases (Lantern Demonstration). ERIC OLDBERG, Chicago.

Discussion to be opened by GEORGE W. HALL, Chicago, and MAX M. PEET, Ann Arbor, Mich.

Cerebral Cysts (Lantern Demonstration).

WINCHELL MCK. CRAIG, Rochester, Minn.

Discussion to be opened by JAMES W. KERNOHAN, Rochester, Minn., and HANS H. REESE, Madison, Wis.

Sequelae and Complications of Craniocerebral Injuries (Lantern Demonstration). ALBERT S. CRAWFORD, Detroit.

Discussion to be opened by THOMAS J. HELDT, Detroit, and LOYAL DAVIS, Chicago.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

MEETS IN SOUTH SECTION, JUNEAU HALL,
MILWAUKEE AUDITORIUM

OFFICERS OF SECTION

Chairman—FRANCIS EUGENE SENEAR, Chicago.

Vice Chairman—HOWARD T. PHILLIPS, Wheeling, W. Va.

Secretary—HARRY R. FOERSTER, Milwaukee.

Executive Committee—ELMORE B. TAUBER, Cincinnati;
GEORGE M. MACKEE, New York; FRANCIS EUGENE
SENEAR, Chicago.

Wednesday, June 14—2 p. m.

Chairman's Address: Dermatitis Due to Woods.

FRANCIS EUGENE SENEAR, Chicago.

Cutaneous Ulcers Treated by the Sulphydryl Containing Amino Acid Cysteine (Lantern Demonstration).

LOUIS A. BRUNSTING and DAISY G. SIMONSEN, Rochester, Minn.

Discussion to be opened by JOSEPH V. KLAUDER, Philadelphia.

Experimental Aspects of Fixed Allonal Eruption (Lantern Demonstration).

ADOLPH B. LOVEMAN, Ann Arbor, Mich.

Discussion to be opened by SAMUEL M. PECK, New York.

Recalcitrant Pustular Eruptions of the Palms and Soles (Lantern Demonstration).

GEORGE C. ANDREWS, FREDERICK W. BIRKMAN and RICHARD J. KELLY, New York.

Discussion to be opened by JAMES HERBERT MITCHELL, Chicago.

The Blood Lipoids in Xanthoma (Lantern Demonstration).

JEFFREY C. MICHAEL and HENRY O. NICHOLAS, Houston, Texas.

Discussion to be opened by UDO J. WILE, Ann Arbor, Mich.

Traumatic Epidermic Cysts (Lantern Demonstration).

MAX S. WIEN and MARCUS R. CARO, Chicago.

Discussion to be opened by WALTER J. HIGHMAN, New York.

Recent Immunologic Studies in Tobacco Hypersensitivity (Lantern Demonstration).

MARION B. SULZBERGER, New York.

Discussion to be opened by GEORGE MILLER MACKEE, New York.

Thursday, June 15—2 p. m.

The Lipid Partition and the Albumin-Globulin Ratio in Syphilis (Lantern Demonstration).

ISADORE ROSEN, FRANCES KRASNOW and MORRIS A. LYONS, New York.

Discussion to be opened by ARTHUR W. STILLIANS, Chicago.

Clinical Observations on a New Arsenical Synthetic in the Treatment of Syphilis (Lantern Demonstration).

S. WILLIAM BECKER and M. E. OBERMAYER, Chicago.

Discussion to be opened by JOHN H. STOKES, Philadelphia.

Treatment of Neurosyphilis with Acetarsones Given Intravenously (Lantern Demonstration).

LEO SPIEGEL, New York.

Discussion to be opened by CARROLL S. WRIGHT, Philadelphia.

Experimental Inguinal Gland Transference in Cases of Early and Late Syphilis (Lantern Demonstration).

C. J. LUNSFORD, Oakland, Calif., and P. W. DAY, Reprisa, Calif.

Discussion to be opened by MARTIN F. ENGMAN, JR., St. Louis.

Divided Doses of Typhoid Vaccine in the Fever Therapy of Neurosyphilis.

J. R. DRIVER and HENRY C. SHAW, Cleveland.

Discussion to be opened by PAUL A. O'LEARY, Rochester, Minn.

The Value of Silver Arsphenamine in the Treatment of Early Syphilis: Conclusions Based on a Study of One Hundred Cases (Lantern Demonstration).

A. BENSON CANNON, New York.

Discussion to be opened by EARL D. OSBORNE, Buffalo.

Tracing the Transmission of Syphilis: An Epidemiologic Study (Lantern Demonstration).

DUDLEY C. SMITH and WILLIAM A. BRUMFIELD, JR., University, Va.

Discussion to be opened by THOMAS PARRAN, JR., Albany, N. Y.

Friday, June 16—2 p. m.

Election of Officers

Granuloma Coccidioides—Further Observations on the Use of Antimony and Potassium Tartrate and Roentgen Therapy in Treatment: Report of an Additional Case (Lantern Demonstration).

CHARLES C. TOMLINSON and PAUL M. BANCROFT, Omaha.

Discussion to be opened by FRED D. WEIDMAN, Philadelphia.

Generalized Angiomatosis with Particular Reference to Hereditary Hemorrhagic Telangiectasis (Lantern Demonstration).

JOHN F. MADDEN, St. Paul.

Discussion to be opened by MICHAEL H. EBERT, Chicago.

The Dextrose and Water Content of Normal and Inflammatory Skin (Lantern Demonstration).

DONALD M. PILLSBURY and GEORGE V. KULCHAR, Philadelphia.

Discussion to be opened by S. WILLIAM BECKER, Chicago.

A Fatal Case of Monilial Infection of the Skin (Lantern Demonstration).

ETHEL M. ROCKWOOD and ARTHUR M. GREENWOOD, Boston.

Discussion to be opened by CLEVELAND J. WHITE, Chicago.

Food Eczema (Lantern Demonstration).

J. GARDNER HOPKINS and BEATRICE M. KESTEN, New York.

Discussion to be opened by ALBERT H. ROWE, Oakland, Calif.

Tuberculosis of the Face (Lantern Demonstration).

HENRY E. MICHELSON and L. H. WINER, Minneapolis.

Discussion to be opened by MARION B. SULZBERGER, New York.

Excessive Solar and Phototherapeutic Radiation as a Causative Factor in Certain Diseases of the Skin.

PAUL E. BECHET, New York.

Discussion to be opened by ELMORE B. TAUBER, Cincinnati.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

MEETS ON STAGE OF MAIN ARENA,
MILWAUKEE AUDITORIUM

OFFICERS OF SECTION

Chairman—J. N. BAKER, Montgomery, Ala.
Vice Chairman—W. H. PERKINS, New Orleans.
Secretary—WILSON G. SMILLIE, Boston.
Executive Committee—A. J. LANZA, New York; J. E. GORDON, Detroit; J. N. BAKER, Montgomery, Ala.

Wednesday, June 14—9 a. m.
SYMPOSIUM ON SILICOSIS

- The Epidemiology of Silicosis. A. J. LANZA, New York.
Discussion to be opened by EMERY R. HAYHURST, Columbus, Ohio.
- The Clinical Manifestations of Silicosis (Lantern Demonstration). R. R. SAYERS, Washington, D. C.
Discussion to be opened by BENJAMIN GOLDBERG, Chicago.
- The Roentgenologic Aspects of Pneumoconiosis (Lantern Demonstration). HENRY K. PANCOAST, Philadelphia.
Discussion to be opened by E. P. PENDERGRASS, Philadelphia.
- The Pathologic Aspects of Silicosis (Lantern Demonstration). LEROY U. GARDNER, Saranac Lake, N. Y.
- The Silicon Dioxide Content of Lungs in Health and in Disease. WILLIAM D. McNALLY, Chicago.
Discussion on papers of DRS. GARDNER and McNALLY to be opened by RICHARD H. JAFFE and C. O. SAPPINGTON, Chicago.
- The Medicolegal Aspects of Silicosis. ARTHUR DOE, Milwaukee.
Discussion to be opened by J. J. MOORE, Chicago.

Thursday, June 15—9 a. m.

- Chairman's Address. J. N. BAKER, Montgomery, Ala.
- Putting the Preventive Idea into Private Practice: The Need for an Intensive Campaign Among Undergraduate and Graduate Medical Students. W. H. PERKINS, New Orleans.
Discussion to be opened by M. E. BARNES, Iowa City.
- Public Care of the Sick in New York State. THOMAS PARRAN, JR., Albany, N. Y.
Discussion to be opened by W. H. ROSS, Brentwood, N. Y.
- The Relation of Diphyllbothrium Latum Infestation to the Public Health (Lantern Demonstration). T. B. MAGATH, Rochester, Minn.
Discussion to be opened by MOSES BARRON, Minneapolis, and M. W. LYON, South Bend, Ind.
- Spray Residue Poisoning. W. V. EVANS, Evanston, Ill.
Discussion* to be opened by H. D. GARRETT, Chicago, and J. C. GEIGER, San Francisco.
- Dermatitis in the Rubber Industry (Lantern Demonstration). LOUIS SCHWARTZ, New York.
Discussion to be opened by P. A. DAVIS and D. M. McDONALD, Akron, Ohio.

Friday, June 16—9 a. m.

- Election of Officers
- Two Years of the Massachusetts Pneumonia Program (Lantern Demonstration). GAYLORD W. ANDERSON and RODERICK HEFFRON, Boston.
- The Epidemiology of Lobar Pneumonia (Lantern Demonstration). WILSON G. SMILLIE, Boston.
- The Distribution of the Newly Classified Serologic Types of Pneumococci in Disease (Lantern Demonstration). W. D. SUTLIFF, Boston.
Discussion on papers of DRS. ANDERSON and HEFFRON, DR. SMILLIE and DR. SUTLIFF to be opened by H. A. REIMANN, Minneapolis; WILLIAM H. PARK, New York, and MAXWELL FINLAND, Boston.
- Tuberculosis Studies in Tennessee: A Study of Tuberculosis in the Negro as Related to Certain Conditions of Environment (Lantern Demonstration). JAMES A. CRABTREE, Nashville, Tenn.

Tuberculosis Among Negroes: A Discussion of the Major Problems That Complicate Its Control.

C. ST. C. GUILD, New York.
Discussion on papers of DRS. CRABTREE and GUILD to be opened by HORTON R. CASPARIS and E. L. BISHOP, Nashville, Tenn.

Food Poisoning in Cities: A Report of Three Outbreaks. J. C. GEIGER, San Francisco.
Discussion to be opened by E. O. JORDAN, Chicago.

SECTION ON UROLOGY

MEETS IN SOUTH SECTION, JUNEAU HALL,
MILWAUKEE AUDITORIUM

OFFICERS OF SECTION

Chairman—N. G. ALCOCK, Iowa City.
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Secretary—J. H. MORRISSEY, New York.
Executive Committee—A. I. FOLSOM, Dallas, Texas; J. D. BARNEY, Boston; N. G. ALCOCK, Iowa City.

Wednesday, June 14—9 a. m.

- The Practical Application of Intravenous Urography (Lantern Demonstration). W. F. BRAASCH, Rochester, Minn.
- Some Principles of Excretion Urography with a Report of Experimental Work on New Compounds, Particularly Sodium Iodohippurate for Oral and Intravenous Urography. MOSES SWICK, New York.
Discussion to be opened by IRA R. SISK, Madison, Wis., and L. T. LEWALD, New York.
- Urography as a Guide in Diverticula of the Urinary Bladder—Indication, Treatment: Report of Cases (Lantern Demonstration). R. H. HERBST, Chicago.
- A Study of the Relative Clinical Value of Intravenous Urography and Pyelography Based on Diagnostic Results: Report of Traumatic Injuries Following Pyelography (Lantern Demonstration). R. B. HENLINE, New York.
Discussion to be opened by R. E. CUMMING, Detroit, and T. D. MOORE, Memphis, Tenn.
- The Routine Use of Neoiopax in Suspected Injuries to the Kidney, Bladder and Other Urinary Organs (Lantern Demonstration). C. M. McKENNA, Chicago.
Discussion to be opened by G. H. EWELL, Madison, Wis., and M. W. SHERWOOD, Milwaukee.
- Urethrocystography (Lantern Demonstration). J. A. HYAMS, New York; HERBERT R. KENYON, Cedarhurst, N. Y., and SAMUEL E. KRAMER, Perth Amboy, N. J.
Discussion to be opened by M. A. NICHOLSON, Duluth, Minn., and ROBERT GUTIERREZ, New York.

Thursday, June 15—9 a. m.

SYMPOSIUM ON TRANSURETHRAL RESECTION AND PROSTATIC SURGERY

- Chairman's Address: A Comparison of Immediate Results in Two Equal Consecutive Series of Cases of Prostatic Resection and Surgical Prostatectomy (Lantern Demonstration). N. G. ALCOCK, Iowa City.
- A Clinical Consideration of Transurethral Resection with Analyses and Studies of Results. LEON HERMAN and LLOYD B. GREENE, Philadelphia.
- Individualizing the Prostatic Patient in the Selection of Treatment (Lantern Demonstration). W. E. LOWER and W. J. ENGEL, Cleveland.
Discussion on papers of DR. ALCOCK, DRS. HERMAN and GREENE and DRS. LOWER and ENGEL to be opened by E. L. KEYES, New York; H. C. BUMPUS, Rochester, Minn., and J. D. BARNEY, Boston.
- A Review of the Prostatic Problem Based on Developments of the Past Three Years in This Field of Surgery (Lantern Demonstration). O. S. LOWSLEY, New York.
Discussion to be opened by A. R. STEVENS, New York; OMAR F. ELDER, Atlanta, Ga., and J. R. DILLON, San Francisco.
- Prostatic Resorption: A New Treatment for Early Prostatism, with Presentation of New Instruments and New Currents. MAXIMILIAN STERN, De Land, Fla.
- The Relief of Prostatic Obstruction (Lantern Demonstration). C. W. COLLINGS, New York.
Discussion on papers of DRS. STERN and COLLINGS to be opened by F. E. B. FOLEY, St. Paul; T. J. KIRWIN, New York, and C. H. DET. SHIVERS, Atlantic City, N. J.

A Presentation of a Method for Local Infiltration Anesthesia of the Prostate Preliminary to Prostatic Resection (Lantern Demonstration).
W. N. WISHARD, H. G. HAMER and H. O. MERTZ, Indianapolis.
Discussion to be opened by G. J. THOMPSON, Rochester, Minn., and H. M. STANG, Eau Claire, Wis.

Friday, June 16—9 a. m.

Election of Officers

SYMPOSIUM ON THE PYELITIS OF PREGNANCY

Kidney Changes in Pregnancy (Lantern Demonstration).
H. L. KRETSCHMER and N. S. HEANEY, Chicago.

The Postpartum Bladder (Lantern Demonstration).
L. M. RANDALL, Rochester, Minn.
Discussion on papers of Drs. KRETSCHMER and HEANEY and DR. RANDALL to be opened by VINCENT J. O'CONNOR, Chicago, and W. E. STEVENS, San Francisco.

The Relation of Pregnancy Changes and Infections to the Recurrence of Infections in Subsequent Pregnancies (Lantern Demonstration). E. G. CRABTREE, Boston.

The Postpartum Kidney.
H. W. E. WALTHER and R. M. WILLOUGHBY, New Orleans.
Discussion on papers of Dr. CRABTREE and Drs. WALTHER and WILLOUGHBY to be opened by G. C. PRATHER, Boston; A. I. FOLSOM, Dallas, Texas, and ANSON L. CLARK, Rochester, Minn.

Pyelitis and Pyelonephritis in Pregnancy—Studies with Reference to the Persistence of Symptoms Following Delivery; Treatment: Indications and Results (Lantern Demonstration).
H. D. FURNISS, New York.

The Treatment of Certain Cases of Pyelitis of Pregnancy Without the Use of the Ureteral Catheter: An Explanation Based on the Physiology of the Bladder.
D. K. ROSE, St. Louis.
Discussion on papers of Drs. FURNISS and ROSE to be opened by R. M. NESBIT, Ann Arbor, Mich., and J. K. ORMOND, Detroit.

The Effect of Pregnancy on the Urinary Tract (Lantern Demonstration).
HARRY P. LEE, Iowa City.
Discussion to be opened by W. M. KEARNS, Milwaukee.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN NORTH SECTION, JUNEAU HALL,
MILWAUKEE AUDITORIUM

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Chairman—W. BARNETT OWEN, Louisville, Ky.
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Secretary—FREMONT A. CHANDLER, Chicago.
Executive Committee—HENRY W. MEYERDING, Rochester, Minn.; J. W. SEVER, Boston; W. BARNETT OWEN, Louisville, Ky.

Wednesday, June 14—9 a. m.

Intracapsular Fractures of the Hip: A New Device for Lateral Osteosynthesis (Lantern Demonstration).

MYRON O. HENRY, Minneapolis.
Discussion to be opened by E. L. ELIASON, Philadelphia; W. E. WOLCOTT, Des Moines, Iowa; CHESTER C. SCHNEIDER and JOHN W. POWERS, Milwaukee, and E. T. EVANS, Minneapolis.

Epinephrine and Pilocarpine in the Treatment of Progressive Pseudohypertrophic Muscular Dystrophy (Lantern Demonstration).

GARRY DE N. HOUGH, JR., Springfield, Mass.
Discussion to be opened by ARTHUR STEINDLER, Iowa City, and H. B. THOMAS and PHILIP LEWIN, Chicago.

Tuberculosis of the Greater Trochanter (Lantern Demonstration).

HENRY W. MEYERDING, Rochester, Minn., and R. J. MROZ, Rockford, Ill.

Discussion to be opened by CARL E. BADGLEY and PAUL C. WILLIAMS, Ann Arbor, Mich., and FREDERICK C. KIDNER, Detroit.

Knee Joint Arthroplasty (Motion Picture Demonstration).

W. R. MACAUSLAND, Boston.

Original Arthroplastic Operations for the Hip and Knee (Lantern Demonstration). FRED H. ALBEE, New York.

Discussion on papers of Drs. MACAUSLAND and ALBEE to be opened by W. B. OWEN, Louisville, Ky., and W. C. CAMPBELL, Memphis, Tenn.

Relaxed or Resistant Congenital Clubfoot of Early Childhood (Lantern Demonstration).

BURT G. CHOLLET, Toledo, Ohio.

Discussion to be opened by ROBERT CAROTHERS, Cincinnati, and HAROLD A. SOFIELD, Chicago.

Recurrent Dislocation of the Patella (Lantern Demonstration).

GEORGE A. WILLIAMSON and WALLACE H. COLE, St. Paul.

Discussion to be opened by HERMAN C. SCHUMM, Milwaukee; PAUL W. GIESSLER, Minneapolis, and JAMES A. DICKSON, Cleveland.

Thursday, June 15—9 a. m.

Use of Autogenous Bone Pin Through Acromion into Humeral Head in Shoulder Arthrodeses (Lantern Demonstration). J. WARREN WHITE, Greenville, S. C.

Discussion to be opened by ROBERT E. BURNS, Madison, Wis., and EMIL D. W. HAUSER, Chicago.

Traumatic Backache (Lantern Demonstration).

PAUL N. JEPSON, Philadelphia.

Low Back Pain with Especial Reference to the Importance of the Articular Facets (Lantern Demonstration).

RALPH K. GHORMLEY, Rochester, Minn.

Discussion on papers of Drs. JEPSON and GHORMLEY to be opened by HENRY W. MEYERDING, Rochester, Minn.; ROBERT B. OSGOOD, Boston, and LEWIS CLARK WAGNER and SAMUEL KLEINBERG, New York.

Chairman's Address: Ununited Fractures of the Humerus (Lantern Demonstration).

W. BARNETT OWEN, Louisville, Ky.

Aberrant Ossification in the Foot (Lantern Demonstration).

MARION N. GIBBONS, Cleveland.

Discussion to be opened by ARTHUR STEINDLER, Iowa City; R. PLATO SCHWARTZ, Rochester, N. Y., and MARCUS H. HOBART, Evanston, Ill.

Prehallux as a Cause of Flatfoot: Operative Correction (Lantern Demonstration). FREDERICK C. KIDNER, Detroit.

Discussion to be opened by EMIL S. GEIST, Minneapolis, and CHARLES W. PEABODY, Detroit.

Early Diagnosis and Treatment of Congenital Dislocation of Hip (Lantern Demonstration).

JOSEPH A. FREIBERG, Cincinnati.

Discussion to be opened by JOHN L. PORTER, Evanston, Ill.; RALPH K. GHORMLEY, Rochester, Minn., and W. P. BLOUNT, Milwaukee.

Friday, June 16—9 a. m.

Election of Officers

The Treatment of Severe Fracture of the Shaft of the Tibia by Skeletal Traction (Lantern Demonstration).

W. K. WEST, Oklahoma City.

Discussion to be opened by F. J. GAENSLER, Milwaukee; W. B. CARRELL, Dallas, Texas, and D. H. LEVINTHAL, Chicago.

Osteotomy for Flexion Deformity at the Hip Due to Anterior Poliomyelitis (Lantern Demonstration).

EDWIN W. RYERSON, Chicago.

Discussion to be opened by J. S. SPEED, Memphis, Tenn.; JOHN O. DIETERLE, Milwaukee, and E. H. WILSON, Columbus, Ohio.

Fracture Healing: Its Influence on Choice of Treatment Methods (Lantern Demonstration).

CLAY RAY MURRAY, New York.

The Effect of a Local Calcium Depot on Osteogenesis and Healing of Fractures (Lantern Demonstration).

J. ALBERT KEY, St. Louis.

Discussion on papers of Drs. MURRAY and KEY to be opened by ANDREW C. IVY, Chicago; F. J. GAENSLER, Milwaukee; E. L. COMPERE, Chicago, and R. D. SCHROCK, Omaha.

The Albee Bone Graft and the Orr Method of Dressing as a Method of Treatment in Recent Compound Fracture (Lantern Demonstration).

H. WINNETT ORR, Lincoln, Neb.

Discussion to be opened by FRED H. ALBEE, New York; E. B. MUMFORD, Indianapolis, and E. D. MCBRIDE, Oklahoma City.

Subperiosteal Resection of the Tibial Shaft in Osteomyelitis (Lantern Demonstration).

D. M. BOSWORTH, New York.

Discussion to be opened by D. B. PHEMISTER, Chicago; J. E. M. THOMSON, Lincoln, Neb., and WALLACE H. COLE, St. Paul.

Old, Stiff Painful Shoulders, Exclusive of Tuberculosis and Purulent Infections (Motion Picture Demonstration).

EDSON B. FOWLER, Chicago.

Discussion to be opened by WALLACE S. DUNCAN, Cleveland; E. B. MUMFORD, Indianapolis; EDWIN W. RYERSON, Chicago; F. J. GAENSLER, Milwaukee, and S. H. EASTON, Peoria, Ill.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS ON STAGE OF MAIN ARENA,
MILWAUKEE AUDITORIUM

OFFICERS OF SECTION

Chairman—CURTICE ROSSER, Dallas, Texas.

Vice Chairman—ALBERT F. R. ANDRESEN, Brooklyn.

Secretary—H. L. BOCKUS, Philadelphia.

Executive Committee—DUDLEY A. SMITH, San Francisco; GEORGE B. EUSTERMAN, Rochester, Minn.; CURTICE ROSSER, Dallas, Texas.

Wednesday, June 14—2 p. m.

Stricture of the Rectum: Some of Its Problems.

COLLIER F. MARTIN, Philadelphia.

Discussion to be opened by CLYDE W. MORTER, Milwaukee, and HERBERT T. HAYES, Houston, Texas.

Management of Advanced Carcinoma of the Gastro-Intestinal Tract (Lantern Demonstration).

FRANK G. YEOMANS, New York.

Discussion to be opened by GEORGE E. BINKLEY, New York, and HARRY H. BOWING, Rochester, Minn.

A Plastic Operation for Certain Types of Hemorrhoids (Lantern Demonstration).

W. A. FANSLER and JAMES KERR ANDERSON, Minneapolis.

Discussion to be opened by DUDLEY A. SMITH, San Francisco, and CLEMENT L. MARTIN, Chicago.

Preoperative and Postoperative Management of Diseases of the Upper Part of the Digestive Tract.

JAMES F. WEIR and WALTERMAN WALTERS, Rochester, Minn.

Discussion to be opened by WALTER L. PALMER, Chicago, and RUSSELL L. HADEN, Cleveland.

The Present Status of Chronic Ulcerative Colitis, with Special Reference to Etiology (Lantern Demonstration).

MOSES PAULSON, Baltimore.

Discussion to be opened by SARA M. JORDAN, Boston, and FRANK SMITHIES, Chicago.

Chronic Ulcerative Colitis: Additional Proof of Its Systemic Origin (Lantern Demonstration).

L. A. BUIE and J. A. BARGEN, Rochester, Minn.

Discussion to be opened by HORACE W. SOPER, St. Louis, and FRANKLIN W. WHITE, Boston.

Thursday, June 15—2 p. m.

Chairman's Address: Current Questions in Proctology.

CURTICE ROSSER, Dallas, Texas.

Migraine—An Allergic Phenomenon (Lantern Demonstration).

ALBERT F. R. ANDRESEN, Brooklyn.

Discussion to be opened by ALBERT H. ROWE, Oakland, Calif., and HARRY B. WILMER, Philadelphia.

Fundamental Difficulties in the Treatment of Gastric and Duodenal Ulcer (Lantern Demonstration).

WALTER L. PALMER, Chicago.

Discussion to be opened by BRUCE C. LOCKWOOD, Detroit, and SIDNEY A. PORTIS, Chicago.

Gastric Acidity in Thyroid Dysfunction (Lantern Demonstration).

S. ALLEN WILKINSON, JR., Boston.

Discussion to be opened by RALPH C. BROWN, Chicago, and ASHER WINKELSTEIN, New York.

Hyperinsulinism—A Disease Entity: A Résumé of the Etiology, Pathology, Symptoms, Diagnosis, Prognosis and Treatment of Spontaneous Insulinogenic Hypoglycemia (Lantern Demonstration).

SEALE HARRIS, Birmingham, Ala.

Discussion to be opened by RUSSELL M. WILDER, Rochester, Minn., and HENRY J. JOHN, Cleveland.

The Digestive Tract and Diet in Anemia (Lantern Demonstration).

MAURICE B. STRAUSS, Boston.

Discussion to be opened by CYRUS C. STURGIS, Ann Arbor, Mich., and LAY MARTIN, Baltimore.

Vitamin B Deficiency and the Atrophic Tongue.

ADOLPH M. HUTTER and WILLIAM S. MIDDLETON, with the Collaboration of HARRY STEENBOCK, Madison, Wis.

Discussion to be opened by ADOLPH SACHS, Omaha, and FRANK D. GORHAM, St. Louis.

Friday, June 16—2 p. m.

Election of Officers

SYMPOSIUM ON ABDOMINAL PAIN

Sensitivity of the Individual to Pain with Special Reference to Abdominal Pain. EMANUEL LIBMAN, New York.

Discussion to be opened by RUSSELL S. BOLES, Philadelphia, and BURRILL B. CROHN, New York.

Mechanism of Abdominal Pain of Visceral Origin.

WALTER C. ALVAREZ, Rochester, Minn.

Discussion to be opened by JOSEPH A. CAPPS, Chicago, and SOMA WEISS, Boston.

Clinical Aspects of Abdominal Pain of Visceral Origin.

F. M. POTTENGER, Monrovia, Calif.

Discussion to be opened by FRED M. SMITH, Iowa City, and ELMER L. EGGLESTON, Battle Creek, Mich.

Pain and Tenderness of the Abdominal Wall (Lantern Demonstration).

JOHN BERTON CARNETT, Philadelphia.

Discussion to be opened by WILLIAM J. KERR, San Francisco, and JOHN G. MATEER, Detroit.

Anorectal Pain and Its Clinical Significance.

LOUIS J. HIRSCHMAN, Detroit.

Discussion to be opened by JEROME M. LYNCH, New York, and DESCUM C. MCKENNEY, Buffalo.

SECTION ON RADIOLOGY

MEETS IN WALKER HALL, MILWAUKEE AUDITORIUM

OFFICERS OF SECTION

Chairman—GEORGE W. GRIER, Pittsburgh.

Vice Chairman—W. WALTER WASSON, Denver.

Secretary—JOHN T. MURPHY, Toledo, Ohio.

Executive Committee—ARTHUR W. ERSKINE, Cedar Rapids, Iowa; HENRY K. PANCOAST, Philadelphia; GEORGE W. GRIER, Pittsburgh.

Wednesday, June 14—2 p. m.

Chairman's Address: The Role of the Radiologist in the Treatment of Cancer. GEORGE W. GRIER, Pittsburgh.

Skeletal Pathology of Endocrine and Metabolic Origin (Lantern Demonstration).

MAX BALLIN, PLINN F. MORSE and WILLIAM A. EVANS, Detroit.

The Latent Period in the Roentgen Diagnosis of Pulmonary Tuberculosis (Lantern Demonstration).

LEO G. RIGLER and FREDERICK B. EXNER, Minneapolis.

Tuberculosis: Its Diagnosis and Check of Treatment by X-Rays. H. K. DUNHAM, Cincinnati.

The Roentgen Diagnosis of Cardiac Aneurysms (Lantern Demonstration).

DAVID STEEL, Cleveland.

Diseases of the Pleura (Lantern Demonstration).

SAMUEL BROWN, Cincinnati.

Thursday, June 15—2 p. m.

Cholecystographic Study of the Bile Ducts (Lantern Demonstration).

HAROLD SWANBERG, Quincy, Ill.

Roentgenologic Observations in Certain Chronic Gastric Conditions Which Are Completely Relieved by a Special Diet (Lantern Demonstration).

BYRON H. JACKSON, Scranton, Pa.

The Importance of the Size of the Stomach When Performing a Gastro-Enterostomy: Its Bearing on the Size of the Stoma and the Ultimate Drainage of the Stomach (Lantern Demonstration).

E. L. JENKINSON, Chicago.

Persisting Errors in the Technic of Oral Cholecystography: A Procedure Designed to Avoid Them (Lantern Demonstration).

B. R. KIRKLIN, Rochester, Minn.

Comments on the Roentgen Diagnosis of Carcinoma at the Cardia (Lantern Demonstration).

WILLIAM H. STEWART and H. E. ILLICK, New York.

Roentgen Evidence of Healing in Duodenal Ulcer (Lantern Demonstration).

DANIEL M. CLARK and MILTON JOHN GEYMAN, Santa Barbara, Calif.

Friday, June 16—2 p. m.

- Election of Officers
Fractures of the Wrist in Children (Lantern Demonstration).
CARL L. GILLIES, Cedar Rapids, Iowa.
Undergraduate Education of Roentgenology (Lantern Demonstration).
F. J. HODGES, Ann Arbor, Mich.
Radiation in Primary Operable Breast Cancer.
DOUGLAS QUICK, New York.
Radiotherapy as a Method of Examining and Identifying Tumors.
A. U. DESJARDINS, Rochester, Minn.
Comments on the Higher X-Ray Voltages (Lantern Demonstration).
ALBERT SOILAND, Los Angeles.
The Procedures for Treatment of Myelogenous Leukemia (Lantern Demonstration).
U. V. PORTMANN, Cleveland.

SECTION ON MISCELLANEOUS TOPICS

Sessions on Anesthesia

MEETS IN WALKER HALL, MILWAUKEE AUDITORIUM

OFFICERS OF SECTION

Chairman—ALBERT H. MILLER, Providence, R. I.
Secretary—JOHN S. LUNDY, Rochester, Minn.

Wednesday, June 14—9 a. m.

- Quantitative Effects of Subarachnoid Injection of Procaine on the Sympathetic, Sensory and Motor Nerves (Lantern Demonstration).
JOHN L. EMMETT, Rochester, Minn.
Discussion to be opened by NELSON W. BARKER, Rochester, Minn.
The Present Status of Various Spinal Anesthetics and Their Clinical Usefulness (Lantern Demonstration).
FRANK W. MARVIN, Boston.
Discussion to be opened by FLOYD T. ROMBERGER, La Fayette, Ind.
Experiments with Anesthetics: IV. Lesions of the Spinal Cord (Lantern Demonstration).
JOHN S. LUNDY, HIRAM E. ESSEX and JAMES W. KERNOHAN, Rochester, Minn.
Discussion to be opened by HALE HAVEN, Chicago.

- Diagnostic, Prognostic and Therapeutic Injections (Lantern Demonstration).
HENRY S. RUTH, Philadelphia.
Discussion to be opened by ERWIN R. SCHMIDT, Madison, Wis., and PAUL G. FLOTHOW, Seattle.
Tribrom-Ethanol, Intratracheal and Regional Anesthesia in Abdominal Operations.
LINCOLN F. SISE, Boston.
Discussion to be opened by FRANK H. LAHEY, Boston.
The Present Status of Preliminary Medication.
PAUL M. WOOD, New York.
Discussion to be opened by WILLARD BARTLETT, JR., St. Louis.

Thursday, June 15—9 a. m.

- Chairman's Address: Organization of the Anesthesia Service of the General Hospital.
ALBERT H. MILLER, Providence, R. I.
Divinyl Oxide: Experimental and Clinical Studies (Lantern Demonstration).
S. GOLDSCHMIDT, ISIDOR S. RAYDIN, BALDWIN LUCKE, G. P. MILLER and C. G. JOHNSTON, Philadelphia.
Discussion to be opened by RALPH M. WATERS, Madison, Wis.
The Role of Pharmacology in the Development of Ideal Anesthesia (Lantern Demonstration).
CHAUNCEY D. LEARE, San Francisco.
Discussion to be opened by FRED W. RANKIN, Lexington, Ky., and BARTON COOKE HIRST, Philadelphia.
The Present Status of Ethylene.
ISABELLA C. HERB, Hubbard Woods, Ill.
Discussion to be opened by ARTHUR DEAN BEVAN, Chicago.
The Present Status of Nitrous Oxide Anesthesia, Especially Its Use in Connection with Intratracheal Anesthesia.
FRANK J. MURPHY, Detroit.
Discussion to be opened by CARL HENRY DAVIS, Milwaukee.
The Use of Carbon Dioxide in Anesthesia (Lantern Demonstration).
JAMES G. POE, Dallas, Texas.
Discussion to be opened by EDWARD H. CARY, Dallas, Texas.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located on the Arena Floor of the Auditorium—the floor directly above the Technical Exhibit and general registration desks. The same general arrangement of booths and decorations will be carried out as in former years. Features this year will be the group exhibits sponsored by twelve sections of the Scientific Assembly, motion picture programs to be run simultaneously by several sections, a symposium on industrial medicine as a joint undertaking of four sections, and the special exhibits subsidized by the Committee on Scientific Exhibit.

Admission will be limited to individuals wearing Fellowship or other badges of the convention and to guests to whom special cards of admission have been issued. The exhibit will not be open to the public.

SPECIAL EXHIBITS

Poliomyelitis Exhibit

The exhibit on poliomyelitis is presented by a special committee on poliomyelitis exhibit under the joint auspices of the Committee on Scientific Exhibit of the Board of Trustees of the American Medical Association, and the United States Public Health Service. The committee is composed of Michael Hoke, Warm Springs, Ga.; James P. Leake, Washington, D. C.; Arthur T. Legg, Boston; William H. Park, New York; John Ruhräh, Baltimore; James D. Trask, New Haven, Conn., and Ralph C. Williams, chairman, Washington, D. C.

An advisory committee representing several sections of the Scientific Assembly of the American Medical Association has been appointed as follows:

- Section on Practice of Medicine, Thomas McCrae, Philadelphia.
Section on Pediatrics, William P. Lucas, San Francisco.
Section on Pathology and Physiology, Ludvig Hektoen, Chicago.
Section on Nervous and Mental Diseases, Louis J. Pollock, Chicago.
Section on Preventive and Industrial Medicine and Public Health, Albert J. Chesley, Minneapolis.
Section on Orthopedic Surgery, Frederick J. Gaenslen, Milwaukee.

An exhibit on the same subject was shown at the New Orleans Session, in 1932. The present exhibit is on somewhat different lines and is intended to cover the essential practical points in the handling of poliomyelitis by the physician. The exhibit will consist of charts, specimens, apparatus, motion pictures, talks and demonstrations on the following phases of poliomyelitis:

1. History.
2. Transmission and incidence.
3. Diagnosis.
4. Early treatment and after-care.

The demonstrators in charge of the different portions of the exhibit are as follows: John Ruhräh, Baltimore; W. Lloyd Aycock, Boston; S. D. Kramer, Brooklyn; James D. Trask, New Haven; Josephine B. Neal, New York; Jean Macnamara, Melbourne, Australia; Arthur T. Legg, Boston; Michael Hoke, Warm Springs, Ga., and Janet B. Merrill, Boston. A pamphlet summarizing the essentials concerning the handling of poliomyelitis by the physician has been prepared and will be distributed at the exhibit.

Exhibit on Circulation of the Blood in the Capillaries

The Committee on Scientific Exhibit of the Board of Trustees has authorized the appointment of a committee to undertake a special exhibit dealing with circulation of the blood in the capillaries. The following committee has been appointed: Gilbert H. Marquardt, Chicago, and Irving Sherwood Wright, chairman, New York.

The exhibit will show the methods and results of study of the minute blood vessels in man. Modern technic for observing and estimating the circulatory activity of these vessels will be demonstrated with living subjects. The use of capillary microscopy, oscillometry, surface temperature studies, capillary fragility studies, and many enlarged photomicrographs of the capillaries in man will be shown. The capillary circulation in the valves of the heart will be demonstrated.

The following physicians have kindly consented to assist with the demonstrations: William J. Kerr, Stacy R. Mettier, R. McCalla, San Francisco; George E. Brown, Rochester, Minn.; A. Wilbur Duryee, New York.

Fresh Pathology Exhibit

The fresh tissue demonstration, which has been an annual feature of the Scientific Exhibit for many years, will be presented again this year under the direction of Norbert Enzer, pathologist at Mount Sinai Hospital, Milwaukee, as chairman.

Arrangements have been made to secure both surgical and necropsy material from Chicago and Madison, as well as from Milwaukee. Demonstrations will be conducted continuously throughout the week with the following pathologists in charge each day.

Monday—Norbert Enzer, Mount Sinai Hospital, Milwaukee.

Tuesday—Otto Saphir and associates, Michael Reese Hospital, Chicago.

Wednesday—Richard H. Jaffe and associates, Cook County Hospital and University of Illinois College of Medicine, Chicago.

Thursday—To be announced later.

Friday—John Grill, Milwaukee County Hospital, Milwaukee.

Exhibit on Cancer

The exhibit on cancer shown last year by a special committee consisting of Max Cutler, Chicago, R. S. Ferguson, New York, and Frank W. Hartman, chairman, Detroit, appointed by the Committee on Scientific Exhibit of the Board of Trustees, is continued this year.

The exhibit presents advances in the problem under three principal headings: 1. Research; 2. Diagnosis; 3. Treatment.

Research will be represented by:

Charles J. Sutro and M. S. Burman, New York: "Fluorescence of Tumors Under Ultraviolet Radiation."

R. S. Ferguson, New York: "Biology of Teratoma, Cancer of the Ovary and Melanoma."

Alfred Plaut, New York: "Struma Ovarii."

H. L. Jaffe, A. Bodansky and J. E. Blair, New York: "Effects of Experimental Hyperparathyroidism on Bones."

Diagnosis will be represented by:

The Bone Tumor Registry of the American College of Surgeons.

The Central Bureau for the Study of Tumors of Philadelphia, Joseph McFarland, director.

The Lymph Gland Tumor Registry of the American Association of Pathologists and Bacteriologists.

The Bladder Tumor Registry of the American Urological Association and The Eye Melanoma Registry.

"The Present Status of Biopsy" presented by Hayes E. Martin and Edward E. Ellis of New York, A. B. McGraw and Frank W. Hartman, Detroit.

Treatment will be represented by:

Grant E. Ward, Baltimore, "Electrosurgery." Demonstration to consist of knock-down apparatus showing various types of generators, technic, electrodes; histologic changes produced by various high frequency currents and a motion picture showing three operations with electrosurgery.

G. Faila and associates, New York, "High Voltage Roentgen-Ray Equipment (700 K. V.): Physical and Biologic Characteristics." Demonstration will consist of model and photographs of 700 kilovolt tube layout; graph showing radiation emission penetration, depth dosage and radium equivalence; relative biologic effects on experimental material and human tissue.

Max Cutler, Chicago, "Radium Therapy." Demonstration will consist of model and photographs of 4 Gm. radium bomb and methods of application; technic for radium therapy of various tumors in various parts of the body.

Demonstrations will be carried on continuously throughout the week by competent physicians. Motion pictures will be shown on several phases of the subject, and a pamphlet will be distributed covering the essential points of the exhibit.

SECTION EXHIBITS

Twelve sections of the Scientific Assembly have sponsored group exhibits through special exhibit committees. The individuals participating in these exhibits are listed under the description of the respective sections. In certain instances in which the subject matter is of interest to more than one group, the exhibits are described in one section and cross indexed in another section.

Section on Practice of Medicine

The exhibit sponsored by the Section on Practice of Medicine covers various forms of heart diseases, diseases of the

circulatory system, diseases of the kidney and other miscellaneous topics. The section is cooperating in the symposium on industrial medicine and in the special exhibit on poliomyelitis. A motion picture program will be run on a definite schedule in an area adjacent to the section exhibits. The committee in charge is composed of James H. Austin, Philadelphia; Eugene S. Kilgore, San Francisco, and L. G. Rowntree, chairman, Philadelphia.

HERBERT A. WILDMAN, Department of Hygiene, College of Wooster, Wooster, Ohio: Incipient cardiovascular diseases in young adults; diagnostic value of function tests. Exhibit of correlation of etiologic and diagnostic data in cases of functional and organic tachycardia, cardiac irregularities, functional and organic heart murmurs, congenital heart disease, emotional arterial hypertension, elastic and inelastic types of hypertension, arteriosclerosis, arterial hypotension.

FRANK J. HECK, Mayo Clinic, Rochester, Minn.: Fundamental changes in blood cells. Exhibit of colored photomicrographs showing the changes in the erythrocytes and leukocytes in normal and abnormal blood; demonstration of proper technic of making and staining blood smears. Demonstrations will show changes in individual cells and composite pictures of the common as well as the rarer diseases of the blood.

WILLIAM P. MURPHY, Peter Bent Brigham Hospital, Boston: Anemia—treatment and results. Exhibit of charts showing progress in treatment of anemia, both pernicious and secondary; effect on hemoglobin formation in treatment of secondary anemia with the use of whole liver, liver extract by mouth, iron and intramuscular injections of liver extract. In pernicious anemia; rate of red blood cell formation with results in individual cases; effect of certain forms of treatment in the maintenance of normal condition of the blood and need for adequate treatment.

ALBERT S. HYMAN, Witkin Foundation for the Study and Prevention of Heart Disease, Beth David Hospital, New York: Resuscitation of the stopped heart by intracardial therapy; demonstration of the artificial pacemaker. Exhibit of original photographs, electrocardiograms, sketches, diagrams and models illustrating the experimental work both in animal and in man concerned with the phenomena associated with the dying heart; illustrations of cardiac arrest in its various stages; reactivation of the stopped heart by various types of intracardial therapy; theoretical and electrophysical background of the artificial pacemaker; demonstration of the apparatus and its method of employment.

FRANCIS D. MURPHY and JOHN GRILL, Marquette University and Milwaukee County Hospital, Milwaukee: Study of nephritis. (a) Exhibit of specimens of various types of nephritis with photomicrographs giving details of histologic study and a history of the specimen; (b) historical aspects of nephritis, shown in copies of portraits of the main contributors to the subject especially during the last century; photographic copies of some of the chief articles dealing with the disease.

G. PHILIP GRABFIELD, Harvard Medical School, Boston: Relationship between hypnotic efficiency and cost. Exhibit of charts showing the relationship between the efficiency of hypnotics and their cost.

J. GRAHAM EDWARDS, University of Buffalo Medical School, Buffalo: Functional loci in renal tubules. Exhibit of graphic and photomicrographic representation of functionally different portions of the renal tubule of vertebrates as induced experimentally; typical examples of functionally different portions in isolated tubules, especially in the mammalian tubule, as seen under the microscope; explanatory charts of methods and quantitative analyses of the amount of certain substances excreted in the urine as influenced by experimental procedure.

ELLIOTT P. JOSLIN, George F. Baker Clinic, New England Deaconess Hospital, Boston, and HERBERT H. MARKS, Metropolitan Life Insurance Company, New York: Prevention of diabetes mellitus and certain of its complications. Exhibit of charts, pathologic specimens, microscopic slides and roentgenograms on (a) the prevention of obesity in the families of diabetic patients, especially after 40 years of age and after infections and operations, particularly on the gallbladder; to warn against intermarriage of families with known diabetic heredity; to discover incipient cases; (b) complications—prevention of coma, pulmonary tuberculosis, vascular disease,

cataracts and retinal changes; (c) evidences of disturbed fat metabolism.

JOHN W. TOWEY, Powers, Mich.; HENRY C. SWEANY, Chicago, and WILLIS H. HURON, Iron Mountain, Mich.: Further observations of a pneumonitis produced by the spores of a fungus (*Coniosporium corticale*). See description under SYMPOSIUM ON INDUSTRIAL MEDICINE.

MOTION PICTURES: The following motion pictures will be shown on a definite schedule to be announced later:

LEWIS M. HURNTHAL, Lahey Clinic, Boston: The mechanism of the heart beat and electrocardiography. Animation of the diagrammatic cross sectioned heart showing the normal and abnormal mechanisms, along with simultaneous animated electrocardiograms.

CLAYTON J. LUNDY, Chicago: The mechanism and electrocardiographic registration of the heart beat in health and disease. Reel 1, the normal heart beat. Reel 2, certain arrhythmias.

Section on Obstetrics, Gynecology and Abdominal Surgery

The exhibit of the Section on Obstetrics, Gynecology and Abdominal Surgery is under the direction of a committee composed of Carl Henry Davis, Milwaukee; Norman F. Miller, Ann Arbor, Mich., and E. D. Plass, chairman, Iowa City. Special emphasis is placed on female genital cancer, a symposium by the section being arranged on this subject.

GROUP EXHIBIT, SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Early diagnosis of female genital cancer. Exhibit of drawings, charts and gross specimens of the types and degrees of genital cancer in women; charts emphasizing the significance of metrorrhagia and especially of postmenopausal bleeding; charts to show the time lost in starting effective treatment as due to the patients or to the physician. The following individuals will demonstrate in the exhibit: HOWARD C. TAYLOR, JR., New York; C. C. NORRIS, Philadelphia; HENRY SCHMITZ, Chicago; JOHN W. HARRIS, Madison; NORMAN F. MILLER, Ann Arbor, Mich., and WILLARD R. COOKE, Galveston, Texas.

R. A. BARTHOLOMEW, Department of Obstetrics, Emory University School of Medicine, Atlanta, Ga.: Gross and microscopic specimens of placental infarcts and their probable relation to preeclampsia, eclampsia and abruptio placentae. Exhibit of cut strips of placentas, fixed in formaldehyde and preserved in alcohol, illustrating the various types of infarcts and their probable relation to preeclampsia, eclampsia and abruptio placentae, with brief clinical notes and description; microscopic sections from the gross specimens and colored lantern slide photomicrographs with brief description and clinical notes illustrating the microscopic appearance of the various types of infarcts; chart showing a diagrammatic representation of placental infarcts and their probable relation to preeclampsia, eclampsia and abruptio placentae.

Section on Ophthalmology

The Section on Ophthalmology will supplement its exhibits with a motion picture program covering a variety of topics. The committee in charge consists of Thomas D. Allen, Chicago; Edward R. Ryan, Milwaukee, and Parker Heath, chairman, Detroit.

PAUL L. DAY, WILLIAM C. LANGSTON and K. W. COSGROVE, University of Arkansas School of Medicine, Little Rock, Ark.: Cataract and other ocular changes resulting from a deficiency of vitamin G. Exhibit of photographs, charts and histopathologic sections illustrating the various phases of vitamin G deficiency manifestations, with special reference to cataract and other ocular changes, and the effect on such ocular changes of the addition of vitamin G to the experimental diet.

DANIEL M. KIRBY, Department of Ophthalmology, Columbia University College of Physicians and Surgeons, New York: Cataract. Exhibit of (1) cultures of crystalline lens epithelium (stained); (2) lantern slides; (3) charts of study of diabetes and relation of disturbances of carbohydrate metabolism to cataract; (4) charts of study of calcium in relation to cataract;

(5) motion picture films of colloidal solutions of lens protein fractions, ultramicroscopic study.

MOTION PICTURES: The following motion pictures will be shown on a definite schedule to be announced later:

E. R. CROSSLEY, Chicago: "Intracapsular Cataract Extraction by the Vacuum Cup Method."

GEORGE N. HOSFORD and AVERY M. HICKS, San Francisco: "The O'Connor Operation for Heterophoria and Heterotropia."

CHARLES N. SPRATT, Minneapolis: "Eye Operations."

Section on Laryngology, Otology and Rhinology

The committee in charge of the exhibit of the Section on Laryngology, Otology and Rhinology is composed of William E. Grove, Milwaukee; Gordon F. Harkness, Davenport, Iowa, and Austin A. Hayden, chairman, Chicago. In addition to the exhibits, a motion picture program will be run on a definite schedule in a space adjoining the section exhibit.

CHEVALIER JACKSON, CHEVALIER L. JACKSON, W. EDWARD CHAMBERLAIN and FRANK W. KONZELMAN, Temple University School of Medicine, Philadelphia: Diagnosis of laryngeal disease. Exhibit of correlated roentgenograms, laryngoscopic views, photomicrographs and gross specimens.

MOTION PICTURES: The following motion pictures will be run on a definite schedule to be announced later:

SAMUEL IGLAUER, Cincinnati: "Bronchoscopy and Esophagoscopy on the Cadaver and the Living."

EDWARD KING, Cincinnati: "Plastic Operation on the Nose." "Intra and Extra Nasal Tear-Sac Operation."

ARTHUR W. PROETZ, St. Louis: "Ciliary Action in the Nasal Sinuses."

HARRIS P. MOSHER, Boston: "Cilia of Antrum and Mucous Membrane." "The Barium Examination of the Esophagus."

WALTER H. THEOBALD, Chicago: "Irrigation of Maxillary Sinus by way of the Natural Opening."

Section on Pediatrics

The exhibit sponsored by the Section on Pediatrics covers lesions associated with tuberculosis and other childhood infections, diet in pediatric practice and other selected exhibits of an educational and research character. The section is cooperating in the special exhibit on poliomyelitis. The committee in charge of the exhibit is composed of Charles F. McKhann, Boston; M. G. Peterman, Milwaukee, and F. Thomas Mitchell, chairman, Memphis, Tenn.

WILLIAM WILLIS ANDERSON, Emory University School of Medicine, Atlanta, Ga.: Clinical conditions in infants and children. Exhibit showing congenital malformations, absence of vertebrae and ribs, situs inversus, absence of part of lower intestine, dextrocardia, spina bifida, pyloric stenosis, osteogenesis imperfecta, and the like.

GLENVILLE GIDDINGS, Atlanta, Ga.: Study of child sleep. Exhibit includes a hypnograph in operation and graphs showing normal sleep of boys and girls and sleep under various experimental conditions.

M. G. PETERMAN and NELL CLAUSEN, Department of Pediatrics, Marquette University and Milwaukee Children's Hospital, Milwaukee: Ketogenic diet in epilepsy. Exhibit of trays of food showing the daily menus on certain diet prescriptions; food charts and photographs illustrating deficiency diseases.

R. G. ALLISON, Lymanhurst School for Tuberculosis, Glen Lake Sanatorium, Minneapolis: Pulmonary tuberculosis in childhood. Exhibit of reduced roentgenograms showing progress, complications and terminations of pulmonary tuberculosis occurring in childhood.

PAUL C. HODGES, WRIGHT ADAMS and WAYNE GORDON, University of Chicago, Chicago: Estimation of cardiac area in children. Exhibit of charts, diagrams, models and roentgenograms illustrating the technical and statistical methods employed in building an equation to predict the frontal plane area of a child's heart from height and weight.

CLIFFORD SWEET, Oakland, Calif.: Postural development of growing children. Exhibit of silhouette photographs taken at various ages showing the changes in postural development

The following physicians have kindly consented to assist with the demonstrations: William J. Kerr, Stacy R. Mettler, R. McCalla, San Francisco; George E. Brown, Rochester, Minn.; A. Wilbur Duryee, New York.

Fresh Pathology Exhibit

The fresh tissue demonstration, which has been an annual feature of the Scientific Exhibit for many years, will be presented again this year under the direction of Norbert Enzer, pathologist at Mount Sinai Hospital, Milwaukee, as chairman.

Arrangements have been made to secure both surgical and necropsy material from Chicago and Madison, as well as from Milwaukee. Demonstrations will be conducted continuously throughout the week with the following pathologists in charge each day.

Monday—Norbert Enzer, Mount Sinai Hospital, Milwaukee.

Tuesday—Otto Saphir and associates, Michael Reese Hospital, Chicago.

Wednesday—Richard H. Jaffe and associates, Cook County Hospital and University of Illinois College of Medicine, Chicago.

Thursday—To be announced later.

Friday—John Grill, Milwaukee County Hospital, Milwaukee.

Exhibit on Cancer

The exhibit on cancer shown last year by a special committee consisting of Max Cutler, Chicago, R. S. Ferguson, New York, and Frank W. Hartman, chairman, Detroit, appointed by the Committee on Scientific Exhibit of the Board of Trustees, is continued this year.

The exhibit presents advances in the problem under three principal headings: 1. Research; 2. Diagnosis; 3. Treatment.

Research will be represented by:

Charles J. Sutro and M. S. Burman, New York: "Fluorescence of Tumors Under Ultraviolet Radiation."

R. S. Ferguson, New York: "Biology of Teratoma, Cancer of the Ovary and Nephroma."

Alfred Plaut, New York: "Struma Ovarii."

H. L. Jaffe, A. Bodansky and J. E. Blair, New York: "Effects of Experimental Hyperparathyroidism on Bones."

Diagnosis will be represented by:

The Bone Tumor Registry of the American College of Surgeons.

The Central Bureau for the Study of Tumors of Philadelphia, Joseph McFarland, director.

The Lymph Gland Tumor Registry of the American Association of Pathologists and Bacteriologists.

The Bladder Tumor Registry of the American Urological Association and The Eye Melanoma Registry.

"The Present Status of Biopsy" presented by Hayes E. Martin and Edward E. Ellis of New York, A. B. McGraw and Frank W. Hartman, Detroit.

Treatment will be represented by:

Grant E. Ward, Baltimore, "Electrosurgery." Demonstration to consist of knock-down apparatus showing various types of generators, technic, electrodes; histologic changes produced by various high frequency currents and a motion picture showing three operations with electrosurgery.

G. Faila and associates, New York, "High Voltage Roentgen-Ray Equipment (700 K. V.): Physical and Biologic Characteristics." Demonstration will consist of model and photographs of 700 kilovolt tube layout; graph showing radiation emission penetration, depth dosage and radium equivalence; relative biologic effects on experimental material and human tissue.

Max Cutler, Chicago, "Radium Therapy." Demonstration will consist of model and photographs of 4 Gm. radium bomb and methods of application; technic for radium therapy of various tumors in various parts of the body.

Demonstrations will be carried on continuously throughout the week by competent physicians. Motion pictures will be shown on several phases of the subject, and a pamphlet will be distributed covering the essential points of the exhibit.

SECTION EXHIBITS

Twelve sections of the Scientific Assembly have sponsored group exhibits through special exhibit committees. The individuals participating in these exhibits are listed under the description of the respective sections. In certain instances in which the subject matter is of interest to more than one group, the exhibits are described in one section and cross indexed in another section.

Section on Practice of Medicine

The exhibit sponsored by the Section on Practice of Medicine covers various forms of heart diseases, diseases of the

circulatory system, diseases of the kidney and other miscellaneous topics. The section is cooperating in the symposium on industrial medicine and in the special exhibit on poliomyelitis. A motion picture program will be run on a definite schedule in an area adjacent to the section exhibits. The committee in charge is composed of James H. Austin, Philadelphia; Eugene S. Kilgore, San Francisco, and L. G. Rowntree, chairman, Philadelphia.

HERBERT A. WILDMAN, Department of Hygiene, College of Wooster, Wooster, Ohio: Incipient cardiovascular diseases in young adults; diagnostic value of function tests. Exhibit of correlation of etiologic and diagnostic data in cases of functional and organic tachycardia, cardiac irregularities, functional and organic heart murmurs, congenital heart disease, emotional arterial hypertension, elastic and inelastic types of hyperplasia, arteriosclerosis, arterial hypotension.

FRANK J. HECK, Mayo Clinic, Rochester, Minn.: Fundamental changes in blood cells. Exhibit of colored photomicrographs showing the changes in the erythrocytes and leukocytes in normal and abnormal blood; demonstration of proper technic of making and staining blood smears. Demonstrations will show changes in individual cells and composite pictures of the common as well as the rarer diseases of the blood.

WILLIAM P. MURPHY, Peter Bent Brigham Hospital, Boston: Anemia—treatment and results. Exhibit of charts showing progress in treatment of anemia, both pernicious and secondary; effect on hemoglobin formation in treatment of secondary anemia with the use of whole liver, liver extract by mouth, iron and intramuscular injections of liver extract. In pernicious anemia; rate of red blood cell formation with results in individual cases; effect of certain forms of treatment in the maintenance of normal condition of the blood and need for adequate treatment.

ALBERT S. HYMAN, Witkin Foundation for the Study and Prevention of Heart Disease, Beth David Hospital, New York: Resuscitation of the stopped heart by intracardial therapy; demonstration of the artificial pacemaker. Exhibit of original photographs, electrocardiograms, sketches, diagrams and models illustrating the experimental work both in animal and in man concerned with the phenomena associated with the dying heart; illustrations of cardiac arrest in its various stages; reactivation of the stopped heart by various types of intracardial therapy; theoretical and electrophysical background of the artificial pacemaker; demonstration of the apparatus and its method of employment.

FRANCIS D. MURPHY and JOHN GRILL, Marquette University and Milwaukee County Hospital, Milwaukee: Study of nephritis. (a) Exhibit of specimens of various types of nephritis with photomicrographs giving details of histologic study and a history of the specimen; (b) historical aspects of nephritis, shown in copies of portraits of the main contributors to the subject especially during the last century; photographic copies of some of the chief articles dealing with the disease.

G. PHILIP GRABFIELD, Harvard Medical School, Boston: Relationship between hypnotic efficiency and cost. Exhibit of charts showing the relationship between the efficiency of hypnotics and their cost.

J. GRAHAM EDWARDS, University of Buffalo Medical School, Buffalo: Functional loci in renal tubules. Exhibit of graphic and photomicrographic representation of functionally different portions of the renal tubule of vertebrates as induced experimentally; typical examples of functionally different portions in isolated tubules, especially in the mammalian tubule, as seen under the microscope; explanatory charts of methods and quantitative analyses of the amount of certain substances excreted in the urine as influenced by experimental procedure.

ELLIOTT P. JOSLIN, George F. Baker Clinic, New England Deaconess Hospital, Boston, and HERBERT H. MARKS, Metropolitan Life Insurance Company, New York: Prevention of diabetes mellitus and certain of its complications. Exhibit of charts, pathologic specimens, microscopic slides and roentgenograms on (a) the prevention of obesity in the families of diabetic patients; especially after 40 years of age and after infections and operations, particularly on the gallbladder; to warn against intermarriage of families with known diabetic heredity; to discover incipient cases; (b) complications—prevention of coma, pulmonary tuberculosis, vascular disease,

cataracts and retinal changes; (c) evidences of disturbed fat metabolism.

JOHN W. TOWEY, Powers, Mich.; HENRY C. SWEANY, Chicago, and WILLIS H. HURON, Iron Mountain, Mich.: Further observations of a pneumonitis produced by the spores of a fungus (*Coniosporium corticale*). See description under SYMPOSIUM ON INDUSTRIAL MEDICINE.

MOTION PICTURES: The following motion pictures will be shown on a definite schedule to be announced later:

LEWIS M. HURNTHAL, Lahey Clinic, Boston: The mechanism of the heart beat and electrocardiography. Animation of the diagrammatic cross sectioned heart showing the normal and abnormal mechanisms, along with simultaneous animated electrocardiograms.

CLAYTON J. LUNDY, Chicago: The mechanism and electrocardiographic registration of the heart beat in health and disease. Reel 1, the normal heart beat. Reel 2, certain arrhythmias.

Section on Obstetrics, Gynecology and Abdominal Surgery

The exhibit of the Section on Obstetrics, Gynecology and Abdominal Surgery is under the direction of a committee composed of Carl Henry Davis, Milwaukee; Norman F. Miller, Ann Arbor, Mich., and E. D. Plass, chairman, Iowa City. Special emphasis is placed on female genital cancer, a symposium by the section being arranged on this subject.

GROUP EXHIBIT, SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Early diagnosis of female genital cancer. Exhibit of drawings, charts and gross specimens of the types and degrees of genital cancer in women; charts emphasizing the significance of metrorrhagia and especially of postmenopausal bleeding; charts to show the time lost in starting effective treatment as due to the patients or to the physician. The following individuals will demonstrate in the exhibit: HOWARD C. TAYLOR, JR., New York; C. C. NORRIS, Philadelphia; HENRY SCHMITZ, Chicago; JOHN W. HARRIS, Madison; NORMAN F. MILLER, Ann Arbor, Mich., and WILLARD R. COOKE, Galveston, Texas.

R. A. BARTHOLOMEW, Department of Obstetrics, Emory University School of Medicine, Atlanta, Ga.: Gross and microscopic specimens of placental infarcts and their probable relation to preeclampsia, eclampsia and abruptio placentae. Exhibit of cut strips of placentas, fixed in formaldehyde and preserved in alcohol, illustrating the various types of infarcts and their probable relation to preeclampsia, eclampsia and abruptio placentae, with brief clinical notes and description; microscopic sections from the gross specimens and colored lantern slide photomicrographs with brief description and clinical notes illustrating the microscopic appearance of the various types of infarcts; chart showing a diagrammatic representation of placental infarcts and their probable relation to preeclampsia, eclampsia and abruptio placentae.

Section on Ophthalmology

The Section on Ophthalmology will supplement its exhibits with a motion picture program covering a variety of topics. The committee in charge consists of Thomas D. Allen, Chicago; Edward R. Ryan, Milwaukee, and Parker Heath, chairman, Detroit.

PAUL L. DAY, WILLIAM C. LANGSTON and K. W. COSGROVE, University of Arkansas School of Medicine, Little Rock, Ark.: Cataract and other ocular changes resulting from a deficiency of vitamin G. Exhibit of photographs, charts and histopathologic sections illustrating the various phases of vitamin G deficiency manifestations, with special reference to cataract and other ocular changes, and the effect on such ocular changes of the addition of vitamin G to the experimental diet.

DANIEL M. KIRBY, Department of Ophthalmology, Columbia University College of Physicians and Surgeons, New York: Cataract. Exhibit of (1) cultures of crystalline lens epithelium (stained); (2) lantern slides; (3) charts of study of diabetes and relation of disturbances of carbohydrate metabolism to cataract; (4) charts of study of calcium in relation to cataract;

(5) motion picture films of colloidal solutions of lens protein fractions, ultramicroscopic study.

MOTION PICTURES: The following motion pictures will be shown on a definite schedule to be announced later:

E. R. CROSSLEY, Chicago: "Intracapsular Cataract Extraction by the Vacuum Cup Method."

GEORGE N. HOSFORD and AVERY M. HICKS, San Francisco: "The O'Connor Operation for Heterophoria and Heterotropia."

CHARLES N. SPRATT, Minneapolis: "Eye Operations."

Section on Laryngology, Otology and Rhinology

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CLIFFORD SWEET, Oakland, Calif.: Postural development of growing children. Exhibit of silhouette photographs taken at various ages showing the changes in postural development

and body mechanics which are normal accomplishments of the growth progress of the individual; methods of correction shown.

CHARLES F. MCKHANN and EDWARD C. VOGT, Children's Hospital, Boston: Lead poisoning in children. Exhibit illustrating the incidence, sources of lead, symptoms, and clinical and roentgenologic signs of lead poisoning in children.

W. AMBROSE MCGEE, Department of Pediatrics, Medical College of Virginia, Richmond, Va.: Comparison of Schilling differential count, sedimentation time and lymphocyte-monocyte ratio in tuberculosis of childhood. Exhibit of charts explaining the significance of the Schilling differential blood count, the sedimentation time, and the lymphocyte-monocyte ratio and a comparison of the relative value of these procedures in tuberculosis of childhood.

I. NEWTON KUGELMASS, Fifth Avenue Hospital, New York: (a) Nature and treatment of birth shock of the new-born. (b) Diagnosis and treatment of hemorrhagic disturbances in childhood. Exhibit will show (a) the prevention of dehydration and semistarvation in the new-born by a gelatin-dextrose solution; (b) a method for the evaluation of the index of the blood clotting function with a correlation of clinical observations in the control of chronic hemorrhagic states.

JOHN D. CAMP and ROGER L. J. KENNEDY, Mayo Foundation for Medical Education and Research, Rochester, Minn.: Roentgenologic changes associated with interesting lesions of childhood. Exhibit of roentgenograms depicting certain interesting but not uncommon lesions occurring in childhood in which the roentgenographic observations play a significant part in the diagnosis.

CARL R. STEINKE and CLARENCE L. HYDE, Springfield Lake Sanatorium, Children's and St. Thomas' Hospitals, Akron, Ohio: Tuberculous and nontuberculous pulmonary infections in children. Exhibit of roentgenograms showing (1) empyema before and after operation; (2) encysted empyema, later developing tuberculosis; (3) lung abscess with associated bronchiectasis; (4) serial films showing the progress of development of pulmonary tuberculosis; (5) a group of children in one family with pulmonary tuberculosis; (6) pulmonary tuberculosis starting in the hilus and spreading to the lung.

WILLIAM E. ANSPACH, the Children's Memorial Hospital, Chicago: Roentgen studies in children. Exhibit consisting of roentgenograms made during life, postmortem roentgenograms, and special films of specimens and photomicrographs, proving radiologic observations. In this group are congenital and acquired conditions, pulmonary tumors and cysts, bone dystrophies, etc.

Section on Nervous and Mental Diseases

The exhibit under the auspices of the Section on Nervous and Mental Diseases covers several different phases of the diagnosis and treatment of mental conditions. The section is cooperating in the special exhibit on poliomyelitis. The committee in charge is as follows: Earl D. Bond, Philadelphia; Groves B. Smith, Godfrey, Ill., and Thomas J. Heldt, chairman, Detroit.

LLOYD H. ZIEGLER, Department of Neurology and Psychiatry, Albany Medical School, Albany, N. Y.: Teaching of neurology and psychiatry. Exhibit of charts showing the set-up in neurology and psychiatry at the Albany Medical College; examples of work done.

MEYER M. HARRIS and ERWIN BRAND, New York State Psychiatric Institute and Hospital, Departments of Internal Medicine and Chemistry, New York: Metabolic studies in myopathies. Exhibit consisting of charts, tables and photographs illustrating the results of experimental and research work on creatine and intermediary protein metabolism in myopathies, establishing a relationship between glycine and creatine, indicating new aspects regarding the physiology of intermediary metabolism. A correlation between the metabolic observations and clinical manifestations will be demonstrated. The application of the results to diagnosis, to classification and to the study of the progress of the disease will be shown and therapeutic possibilities indicated.

Section on Dermatology and Syphilology

The exhibit under the auspices of the Section on Dermatology and Syphilology covers a variety of subjects, prominent among which are two group exhibits. The "history of dermatology" is a cooperative effort on the part of several members of the section; "occupational dermatoses" is a contribution by the section to the symposium of industrial medicine. The section exhibit committee is composed of Clark W. Finnerud, Chicago; Robert L. Gilman, Philadelphia; Hamilton Montgomery, Rochester, Minn.; Lester M. Wieder, Milwaukee, and Fred D. Weidman, chairman, Philadelphia.

SAMUEL AYRES, JR., and NELSON PAUL ANDERSON, Los Angeles: Immunity and allergy in fungus infections. Exhibit shows that circulating antibodies are present in the blood stream in cases of epidermophytosis with the allergic "phytid" eruptions but are absent in normal controls or in patients with only the actual infections that lack "phytids"; photographs and cultures will show how blood serum from cases with "phytids," when mixed with culture mediums, inhibits the growth of fungi.

ARTHUR M. GREENWOOD and ETHEL M. ROCKWOOD, Boston: A fatal case of infection of the skin with *Monilia albicans*. Exhibit of (a) photographs of the skin lesions showing the character of the lesions and progress during a period of two and one-half years; (b) photomicrographs of sections of the skin showing the histopathology and the organisms in the tissue; (c) photomicrographs showing the morphology of the organisms.

J. G. HOPKINS and B. M. KESTEN, Vanderbilt Clinic, Columbia University, New York: Food Eczema. Exhibit of photographs of cases of eczema due to food sensitivity; tables of results of skin and diet tests; tables of elimination diets.

CLEVELAND J. WHITE and A. W. STILLIANS, Department of Dermatology, Northwestern University Medical School, Chicago: Diseases of nails with especial reference to ringworm. Exhibit showing photographs of nail afflictions, such as ringworm, psoriasis, onycholysis, exostoses, avitaminosis, and the like. The increase of fungus infections of the nails will be emphasized by a large number of photographs. Changes of nails due to lack of certain substances in diet (avitaminosis) will be shown; charts of clinical characteristics of many cases of onychomycosis will be demonstrated.

LOUIS A. BRUNSTING and DAISY G. SIMONSEN, Mayo Clinic and Mayo Foundation for Education and Research, Rochester, Minn.: The stimulating action of the sulphhydryl-containing amino acid cysteine on epithelial growth. Exhibit consisting of charts showing the chemical nature of the naturally occurring amino acid cysteine and photographs of cases showing the practical application of the stimulating properties of cysteine to the treatment of cutaneous wounds and ulcers.

H. F. DEWOLF and J. V. VANCLEVE, Department of Dermatology and Syphilology, Western Reserve Medical School and Cleveland City Hospital, Cleveland: Lymphogranuloma inguinale (climatic bubo). Exhibit elaborating the work shown at New Orleans, special emphasis being put on the diagnostic cutaneous Frei reaction with an antigen prepared from pus from lymph nodes affected with this disease. Emphasis is also laid on the so-called anorectal syndrome, as seen especially in the female with this disease. A chart illustrates that the cause of the anorectal syndrome in the female is due to the lymph supply running from the genitalia to the walls of the rectum.

GEORGE C. ANDREWS, FREDERICK W. BIRKMAN and RICHARD J. KELLY, Vanderbilt Clinic, College of Physicians and Surgeons, Columbia University, New York: Recalcitrant pustular eruptions of the palms and soles. Exhibit of photographs, photomicrographs and legends showing features characteristic of this condition.

A. BENSON CANNON, Vanderbilt Clinic, Columbia University, New York: The comparative value of silver, neoarsphenamine and arsphenamine in the treatment of early syphilis. Exhibit of charts and photographs illustrating (a) time and treatment required for healing of chancre and secondaries; (b) time and treatment required for Wassermann reaction to become negative; (c) disappearance of spirochetes from initial lesions;

(d) comparative end-results by drug; (e) rate of arsenic excretion during arsphenamine medication; (f) reactions following arsphenamine administration.

DUDLEY C. SMITH, W. A. BRUMFIELD and J. B. HAWES, University of Virginia, Charlottesville, Va.: Tracing transmission sequence of syphilis. Exhibit of placards of case investigations of early syphilis and contacts, i. e., "follow-up" and "follow-back" of contacts of early syphilitic patients.

EVERETT S. LAIN, Department of Dermatology and Radiology, Oklahoma University and Lain-Roland Clinic, Oklahoma City: Electrogalvanic lesions of the oral cavity. Exhibit consists of (a) photographs, drawings and the enumeration of lesions of the oral cavity caused by electrogalvanic irritation between dissimilar metallic dentures; (b) statement of fundamental laws by which such electric discharges are governed with demonstration of instruments and methods by which current may be measured; (c) discussion of standardization or uniformity of metallic dentures as a possible solution of this pathologic potentiality.

GROUP EXHIBIT, SECTION ON DERMATOLOGY AND SYPHILIGOLOGY: Exhibit of photographs of dermatologists and scientific assemblies, instruments, autographed letters, cartoons, diplomas, moulages, histories, texts, and the like: Contributors to the exhibit are: PAUL E. BECHET, New York; HOWARD FOX, New York; ROBERT L. GILMAN, Philadelphia; JOHN E. LANE, New Haven, Conn; WILLIAM ALLEN PUSEY, Chicago; LESTER M. WIEDER, Milwaukee, and FRED D. WEIDMAN, Philadelphia.

EARL D. OSBORNE, Buffalo: Occupational dermatoses. For description see SYMPOSIUM ON INDUSTRIAL MEDICINE.

Section on Preventive and Industrial Medicine and Public Health

The exhibits of the Section on Preventive and Industrial Medicine and Public Health include a variety of topics on preventive medicine and health education. Stress is laid on the symposium on industrial medicine, in which the section is actively cooperating, as it is also in the special exhibit on poliomyelitis. The committee in charge is composed of Alice Hamilton, Boston; Theodore L. Squier, Milwaukee, and Paul A. Davis, chairman, Akron, Ohio.

THURMAN B. RICE, Indiana University School of Medicine, Indianapolis: Graphic statistics. Exhibit of models which will show in three dimensions certain statistics for the last thirty-two years. There will also be maps, charts and diagrams.

L. F. BADGER, United States Public Health Service, Washington, D. C.: Typhus and Rocky Mountain spotted fever in the United States. Exhibit of (1) endemic typhus, epidemiologically and experimentally showing experimental proof that the rat flea is the vector and that the wild rat is a reservoir; (2) Rocky Mountain spotted fever, epidemiologically, clinically and experimentally showing the relation between the disease in the eastern and in the western parts of the country. Experimental proof that the disease in the east is Rocky Mountain spotted fever will be shown; (3) differential diagnosis: Rocky Mountain spotted fever and endemic typhus both occur endemically in some sections of the country.

HENRY F. VAUGHAN, Detroit: Diphtheria prevention in private practice. During the past four years all diphtheria protection treatments have been given by the family physician in his own office, there having been no free clinics; a survey in 1932 indicates that 77 per cent of the school children and 42 per cent of the preschool group have been protected, also 25 per cent of infants have been protected by the time of their first birthday. The diphtheria death rate has decreased materially with this increase in protection; this is part of the Detroit plan of medical participation in public health work.

R. R. SAYERS, United States Public Health Service, Washington, D. C.: Silicosis. See description under SYMPOSIUM ON INDUSTRIAL MEDICINE.

LOUIS SCHWARTZ, United States Public Health Service, New York: Industrial dermatitis. See description under SYMPOSIUM ON INDUSTRIAL MEDICINE.

BUREAU OF HEALTH AND PUBLIC INSTRUCTION: See description under AMERICAN MEDICAL ASSOCIATION.

Section on Urology

The Section on Urology, with a committee in charge composed of F. E. B. Foley, St. Paul; Moses Swick, New York, and R. S. Ferguson, chairman, New York, is emphasizing among other items three topics of special interest: intravenous urography, prostatic resection and pyelitis in pregnancy.

ANSON L. CLARK, Mayo Clinic, Rochester, Minn.: Bacilluria under ketogenic treatment. Exhibit of charts, a miniature laboratory and plates of papier-mâché "food" used in the ketogenic diet. Instruction will be given in diagnosis and treatment of bacillary infection of the urinary tract, stressing the ketogenic treatment; methods of checking the patient's response will be demonstrated.

ALEXANDER RANDALL, University of Pennsylvania, Philadelphia: The pathology of prostatic obstructions. Exhibit of photographs of prostatic hypertrophy, median bars, prostatic carcinoma and prostatic cysts and calculi.

H. L. KRETSCHMER, N. S. HEANEY and E. A. OCKULY, Rush Medical College of the University of Chicago, Chicago: Changes in the kidney and ureter occurring during normal pregnancy. Exhibit of intravenous pyelograms and some charts giving data obtained.

THOMAS J. KERWIN, Department of Urology, James Buchanan Brady Foundation of the New York Hospital, New York: History of instruments used for resection of the vesical neck by the intra-urethral route. Exhibit of photographs made from drawings of the earlier instruments originally published in urologic textbooks; reproductions of cuts from various journals, and original photographs lent by designers of instruments.

HARRY P. LEE and W. F. MENGERT, University of Iowa City: Effects of pregnancy on the urinary tract. Exhibit of pyeloureterograms and charts showing the changes taking place in the urinary tract during pregnancy and the puerperium, using both intravenous and retrograde methods of urography in normal and abnormal cases, with particular reference to the causes for dilatation of the urinary tract during pregnancy and its involution during the puerperium; pyelo-ureterograms in various types of pathologic conditions of the pelvis are shown for comparison.

N. G. ALCOCK, University of Iowa, Iowa City: Results in transurethral prostatic resection. Exhibit showing results obtained in a large number of unselected cases of prostatism treated by transurethral prostatic resection. This group is compared with a similar number of charts showing the number of cases, carcinomas, hypertrophies, age groups, residual urine, and deaths and causes; also a series of cystograms and urethrograms showing the sizes of prostates and diameter of urethras before and after resection.

A. I. FOLSOM and JO C. ALEXANDER, Urologic Department, Baylor University Medical College, Dallas, Texas: Prostatic resection. Exhibit of graphs presenting a large number of cases together with microscopic section showing depths of coagulation; a model of the bladder and urethra in which the actual operation will be done; motion picture showing some postmortem observations.

MOSES SWICK, Mount Sinai Hospital, New York: Intravenous and oral urograms demonstrating various urologic conditions. Exhibit illustrating results obtained by means of intravenous and oral urography with the use of various compounds, particularly with a new one developed by the author. Various urologic conditions will be illustrated and criteria of evaluation and interpretation for this method demonstrated; its field of application, especially its relationship to and bearing on retrograde pyelography will be outlined; the different aspects of renal function and roentgenologic visualization will be considered.

THOMAS D. MOORE, Memphis, Tenn.: The serial pyelograph—a simple device permitting three pyelograms on one film. A method which makes possible the taking of three exposures in rapid succession with the catheter withdrawn, employing only one film, will be demonstrated. The advantages of pyelograms obtained in this way will be illustrated by a series of films.

Section on Orthopedic Surgery

The exhibit sponsored by the Section on Orthopedic Surgery will include various topics. The section is also cooperating in the special exhibit on poliomyelitis. The section committee in charge consists of Paul N. Jepson, Philadelphia; J. T. O'Ferrall, New Orleans; Herman C. Schumm, Milwaukee, and E. B. Mumford, chairman, Indianapolis.

R. PLATO SCHWARTZ, Department of Surgery, Division of Orthopedics, University of Rochester School of Medicine and Dentistry, Rochester, N. Y.: The electrobasographic methods of recording the gait of man. Exhibit showing (a) continuous motion pictures of the pneumographic method of recording human gait; (b) pneumonic records of "normal" and imitated limps; (c) electrobasograph in operation.

ALBERT G. YOUNG and HAROLD E. MACMAHON, Boston: Chronic proliferative arthritis in rheumatic fever patients. Exhibit of photographs and roentgenograms of joints and hearts in rheumatic fever patients who developed atrophic arthritic joints coincident with rheumatic fever; photographs of pathologic studies made on tissue from hearts and joints of rheumatic fever patients and atrophic arthritic patients.

EDSON B. FOWLER, Northwestern University Medical School, Chicago: Shoulder dissection showing rupture of the subacromial bursa, capsule, supraspinatus and infraspinatus tendons. Exhibit of actual shoulders mounted on movable standards showing varying degrees of rupture of the subacromial bursa, and shoulder joint capsule, along with the infraspinatus and supraspinatus tendons.

Section on Gastro-Enterology and Proctology

The exhibits under the auspices of the Section on Gastro-Enterology and Proctology include a wide variety of topics. A motion picture program will be run on a definite schedule in an area adjoining the section exhibit. The committee in charge is composed of A. F. R. Andresen, Brooklyn; W. A. Fansler, Minneapolis, and A. H. Aaron, chairman, Buffalo.

FRANK H. LAHEY, HOWARD M. CLUTE and RICHARD B. CATTELL, Lahey Clinic, Boston: Surgery of colon and rectum. Exhibit of drawings illustrating technic employed; charts giving mortality and end-results; gross specimens mounted for display with photomicrographs of lesions.

SARA M. JORDAN, EVERETT D. KIEFER, S. ALLEN WILKINSON and LYMAN C. BOYNTON, Lahey Clinic, Boston: Lesions of the stomach. Exhibit of diagnostic data consisting of roentgenograms, charts, case histories; data on therapy, consisting of roentgenograms, statistical charts, pathologic specimens, paintings and drawings.

JEROME MORLEY LYNCH and JOSEPH FELSEN, Polyclinic and Bronx Hospitals, New York: Tumors of the colon and rectum. Exhibit of benign and graded malignant tumors of the colon and rectum. An attempt is made to show the transition stages between adenomas and carcinomas; adaptation of museum material to teaching purposes by means of a pseudosigmoidoscopic device.

THOMAS G. ORR and HJALMAR E. CARLSON, University of Kansas School of Medicine, Kansas City, Kan.: Experimental studies in peristalsis. Exhibit of enlarged tracings of intestine made after administration of various drugs, showing effect of such drugs on peristalsis.

JOHN B. CARNETT, Graduate Hospital, University of Pennsylvania, Philadelphia: Charts pertaining to pain and tenderness in abdominal wall and to posture in relation to abdominal viscerotaxis. Exhibit of photographs, roentgenograms and drawings showing (1) nerve supply to anterior abdominal wall; (2) tests to detect parietal location of abdominal tenderness; (3) bad body mechanics (posture); (4) improved body mechanics with changes in spine and viscera.

SEALE HARRIS, Birmingham, Ala.: Hyperinsulinism, dysinsulinism and hypo-insulinism (diabetes mellitus). Exhibit of blood sugar graphs of cases of hyperinsulinism, dysinsulinism and hypo-insulinism (diabetes mellitus) showing the mild, moderately severe and severe cases, particularly those in which epilepsy, narcolepsy and recurring attacks of convulsions are associated; blood sugar graphs showing the relation of hyperinsulinism to hypo-insulinism (diabetes mellitus): blood sugar

graphs of case of narcolepsy, clinically cured by resection of a portion of the pancreas; outline of hyperinsulinism as a disease entity giving chronologic data of researches that led to its recognition, and the like; blood sugar graphs of cases of epilepsy showing the rise of blood sugar levels after the administration of the bromides and phenobarbital.

MAYO CLINIC AND MAYO FOUNDATION GROUP EXHIBIT, Rochester, Minn.: E. S. JUDD and WALTMAN WALTERS: Surgery of the biliary tract. Exhibit showing diseases of the gallbladder, choledocholithiasis and obstructing lesions of the common bile duct other than choledocholithiasis; surgical technic; moulages and gross specimens.

A. M. SNELL and J. F. WEIR: The differential diagnosis of conditions associated with jaundice—clinical and laboratory data. Exhibit illustrating (1) duodenal drainage and clinical examination of feces to determine the amount and character of bile entering the intestine; (2) determination, by the van den Bergh reaction, of the character and amount of bilirubin in the blood; (3) determination of the tolerance to ingested galactose.

B. R. KIRKLIN: Cholecystographic demonstration of tumors of the gallbladder. Exhibit illustrating the technic of cholecystography after oral administration of the dye, and the cholecystographic demonstration and diagnosis of tumors of the gallbladder, consisting of (1) motion pictures presenting the technic, (2) cholecystograms of typical cases of adenoma and papilloma of the gallbladder, (3) drawings and photographs of pathologic specimens, (4) descriptive matter concerning the cholecystographic manifestations and differential characteristics of the various tumors.

D. C. BEAVER: Lesions producing disturbances of liver function. Exhibit illustrating the pathologic anatomy of the liver in clinically evident disturbances of hepatic function. This includes a résumé of case histories with gross and microscopic preparations.

J. L. BOLLMAN and F. C. MANN: Experimental pathologic changes of the liver. Exhibit showing specimens and photomicrographs of experimental cirrhosis arranged to emphasize the great capacity of the liver for regeneration, the necessity of regeneration, and the factors (usually present in cirrhosis of the liver, that inhibit regeneration.

MOTION PICTURES: The following motion pictures will be shown on a definite schedule to be announced later:

CESARE GIANTURCO and WALTER C. ALVAREZ, Mayo Clinic, Rochester, Minn.: "Roentgen-Ray Motion Pictures of the Stomach of Animals."

WALTER C. ALVAREZ and ARNOLD ZIMMERMANN, Mayo Clinic, Rochester, Minn.: 1. "Intestinal Peristalsis in Animals." 2. "Movements of the Normal Stomach in Animals."

Section on Radiology

The Section on Radiology, besides cooperating in the symposium on industrial medicine, is presenting a section exhibit on a variety of topics. In addition, there will be found a large number of radiologic exhibits sponsored by other sections. The committee in charge for the Section on Radiology is H. B. Podlasky, Milwaukee; Leroy Sante, St. Louis, and James T. Case, chairman, Chicago.

LEO G. RIGLER, S. E. TORSTEN LUND and ROYAL GRAY, University of Minnesota, Minneapolis: Roentgenologic study of identical twins and triplets. Exhibit of complete roentgenograms of the osseous system, lungs and heart of a pair of identical epileptic twins and a set of normal identical triplets presented as an indication of the value of roentgen study in biologic problems. The comparison of paranasal sinus and mastoid development, of epiphyseal development and of anomalies and anatomic variations in these children is presented. Some conclusion as to the genetic origin of certain anomalies of the osseous system and lungs are derived.

SAMUEL BROWN, Jewish Hospital, Cincinnati: A clinical and radiologic study of diseases of the pleura. Exhibit of (1) roentgenograms illustrating various diseases of the pleura; (2) roentgenograms illustrating other diseases of the thoracic cavity from which a differential diagnosis is to be made; (3) diagnosis of interlobar, mediastinal and diaphragmatic pleurisy in all their various forms; (4) correlation between certain

clinical manifestations and the roentgen-ray observations in the case of interlobar dry pleurisy illustrated by charts and roentgenograms; (5) special devices used in roentgenologic technic in demonstrating pleuritic disorders.

ROBERT E. CUMMING and H. A. JARRE, Grace Hospital, Detroit: Roentgenophysiologic studies of the urinary tract. Exhibit of accurate reproductions made by tracings of actual photographic prints from original films portraying the normal physiologic activity of the renal pelvis and ureter, and altered physiologic in disease.

MAX BALLIN, WILLIAM A. EVANS and PLINN F. MORSE, Harper Hospital, Detroit: Skeletal pathologic changes associated with endocrine disturbances. Exhibit of panels, transparencies and pathologic specimens showing skeletal pathologic changes with various endocrine disturbances. Bony changes in the course of thyroidism, parathyroidism, pituitary pathologic changes and also multiglandular upsets (suprarenals, pancreatic islets, and the like) will be discussed.

H. M. WEBER, Mayo Clinic, Rochester, Minn.: Nonmalignant ulcerating lesions of the colon. Exhibit of transparencies and specimens illustrating the roentgenologic manifestations and differential roentgenologic characteristics of the three most commonly encountered types of ulcerative colitis.

HENRY K. PANCOAST and EUGENE P. PENDERGRASS, Philadelphia: Pneumoconiosis, silicosis and conditions that simulate it. See description under SYMPOSIUM ON INDUSTRIAL MEDICINE.

Symposium on Industrial Medicine

Contributions to the symposium on industrial medicine have been made by the Section on Practice of Medicine, Section on Dermatology and Syphilology, Section on Preventive and Industrial Medicine and Public Health, and Section on Radiology. Special attention will be given to dermatologic and pneumonic conditions arising from various occupational activities.

JOHN W. TOWEY, Powers, Mich.; HENRY C. SWEANY, Chicago, and WILLIS H. HURON, Iron Mountain, Mich.: Further observations of pneumonitis produced by the spores of a fungus (*Coniosporium corticale*). Exhibit of a roentgen-ray and pathologic study of pneumonitis produced by the spores of a fungus (*Coniosporium corticale*).

EARL D. OSBORNE, Buffalo, N. Y.: Occupational dermatoses. Exhibit of a collection of photographs and case histories; charts illustrating occupations most frequently responsible for dermatoses; types of dermatoses most frequently encountered; chemicals most frequently the cause of dermatitis; the rôle of allergy and mycotic infection in occupational dermatoses.

R. R. SAYERS, United States Public Health Service, Washington, D. C.: Silicosis. Exhibit of specimens of rock and rock dust known to produce silicosis; roentgenograms of various stages of silicosis and of silicosis plus tuberculosis; of other fibroses of the lungs due to other dusts, such as talc; model of silicotic lungs; microscopic section of silicotic nodules; instruments for determining concentration; photographs and graphs of preventive measures.

LOUIS SCHWARTZ, United States Public Health Service, New York: Industrial dermatitis. Exhibit of photographs of cases; charts showing occurrence, causes and prevention; objects and chemicals known to have caused industrial dermatitis; moulage figures of industrial dermatitis.

HENRY K. PANCOAST and EUGENE P. PENDERGRASS, University of Pennsylvania, Philadelphia: Pneumoconiosis, silicosis and conditions that simulate them. Exhibits of photostats of early reference of disease; some literature describing condition; charts detailing some hazardous industries; charts and slides showing pathologic changes; roentgenograms illustrating types of silicosis and pneumoconiosis; roentgenograms showing conditions that may simulate pneumoconiosis in appearance; criteria for satisfactory roentgen study.

LOUIS M. WARFIELD, H. C. DALLWIG and E. L. THARINGER, Milwaukee: Silicosis. Exhibit of roentgenograms showing various stages of silicosis with gross pathologic specimens and photomicrographs of sections showing development of nodules of the lung.

MISCELLANEOUS EXHIBITS

HARRY E. MOCK, A. R. MORROW and C. E. SHANNON, Surgical Department, Northwestern University Medical School, and St. Luke's Hospital, Chicago: Skull fracture. Exhibit of roentgenograms illustrating various types of skull fractures; photographs of brains showing cerebral injury; photographs obtained at autopsy; charts describing four classes of skull fracture cases, classified according to their severity and the treatment indicated; charts setting forth the treatment indicated in each class, and finally photographs and models illustrating skull fractures and cerebral injuries characteristic of each class.

LOYD ARNOLD and VIRGINIA FISHER, University of Illinois College of Medicine, Chicago: Classification of yeast. Exhibit showing cultural, biochemical and serologic procedures used to classify yeast; demonstration of cultures with the methods used for identification; yeast flora on body surfaces of healthy people.

JACK C. NORRIS, Grady Hospital, Atlanta, Ga.: Uterine fibroids. Exhibit of placards, describing occurrence, etiology, pathology, complications, symptoms, treatment, blood studies; colored pictures showing various types of fibroids; mounted specimens illustrating the tumor from its beginning until it reaches its largest size.

W. D. STOVALL, S. B. PESSIN and ANNA BUBOLZ, University of Wisconsin Medical School and State Laboratory of Hygiene, Madison, Wis.: Classification and pathogenicity of certain monilias isolated from human sources. Exhibit demonstrating morphologic and biochemical differences in many strains of *Monilia* isolated from cases of bronchitis, bronchial pneumonia, thrush and vaginitis; morphology of these organisms as contrasted with certain other organisms commonly known as yeastlike fungi; their appearance on various mediums; the pathogenicity for laboratory animals; demonstration of gross lesions in animals and photomicrographs showing the histology of the lesions; roentgenograms with brief case reports and the incidence of the different species of *Monilia*.

P. F. SWINDLE, Marquette School of Medicine, Milwaukee: The angio-architecture of the eye, heart, liver, spleen and skeletal muscles. Exhibit showing injected and cleared specimens from common laboratory animals, various zoo animals and man, including (1) complete fetal circulation in the eye, vestiges of fetal circulation in the eye of the adult, drainage of fluid from the anterior chambers of the eye without involving a canal of Schlemm; (2) an enormously complex network of arteries and the absence of end-arteries in the sense of Cohnheim in the walls of the ventricles of the normal heart; (3) arterial networks in the liver, spleen and skeletal muscles.

RHODA W. BENHAM, Laboratory for Medical Mycology, Columbia University, New York: Cryptococci, Blastomyces and Coccidioides. Exhibit of cultures, photographs, photomicrographs and drawings of fungi from blastomycosis, torulosis and coccidioidal granuloma; also of related organisms from normal skin and intestine; tables of fermentation and agglutination reactions; illustrations of lesions in animals.

ROY R. KRACKE, Emory University School of Medicine, Atlanta, Ga.: Monocytic leukemia. Exhibit of charts bearing on incidence, distribution, symptoms, blood picture, and other features; arguments for and against myeloblastic or monocytic origin; microscopic preparations showing pathology and blood pictures from most reported cases in the United States; case records from various reported cases; colored plates showing pathology and blood pictures; material assembled chiefly from the Hematological Registry of the American Society of Clinical Pathologists.

K. K. CHEN, A. L. CHEN and H. JENSEN, Lilly Research Laboratories, Indianapolis, and Johns Hopkins University, Baltimore: Toads and toad poisons. (1) Specimens of *Ch'an Su* and many species of toads in their natural colors, making a world representation; (2) comparative histology of their poisonous glands; (3) samples of the active principles isolated from the poisonous secretions; (4) pharmacologic actions and chemical nature of these principles; (5) charts and tracings showing the estimation of the amounts of ergosterol and epinephrine; (6) comparison of the potency of bufagins and bufotoxins with digitalis glycosides; (7) similarity and

differences of secretions produced by the toads under investigation; (8) any use of the poisonous secretion to the toad?

F. P. McNAMARA, Finley Hospital Laboratory, Dubuque, Iowa: Clinicopathologic conferences. Exhibit of pathologic specimens utilized in the clinicopathologic conference, illustrating what can be accomplished by an active laboratory of pathology in a 100 bed hospital. The exhibit will illustrate a wide range of pathologic anatomy. Each specimen will be accompanied by an abstract of the clinical history and the anatomic diagnosis. The complete clinical and autopsy records will be available for reference.

LOUIS W. SAUER, Evanston Hospital, Evanston, Ill.: Whooping Cough. Exhibit of photographs and photomicrographs of pathology of whooping cough, experimental lesions in lung; cough "plates."

P. C. WILLIAMS and CARL E. BADGLEY, Department of Surgery University Hospital, Ann Arbor, Mich.: 1. Low back pain and sciatica. 2. Calcaneoscapoid coalition. Exhibit on low back pain and sciatica consisting of roentgenograms, illustrations and specimens will show a narrowing or complete loss of the lumbosacral intervertebral disk in patients suffering with this condition; also illustrations and roentgenograms explaining the mechanics of nerve root irritation, and the treatment. Exhibit of calcaneoscapoid coalition consists of roentgenograms and illustrations demonstrating this condition and the treatment indicated.

GEORGE A. BENNETT, Department of Histology, Georgetown Medical School, Washington, D. C.: Thorium dioxide and tuberculosis in guinea-pigs and rabbits. Exhibit demonstrating how the R tubercle bacillus produces localized tuberculous lesions in guinea-pigs, which will heal spontaneously, but on the injection of thorium dioxide immediately following the production of local lesions or after such lesions have healed, a generalized tuberculosis occurs. Thorium dioxide added to culture mediums for the R strain causes an increased growth.

K. J. HENRICHSEN, Municipal Tuberculosis Sanitarium, Chicago: Treatment of pulmonary tuberculosis. Exhibit of roentgenograms, showing different methods of treating pulmonary tuberculosis, with results.

W. W. DUKE, Kansas City, Mo.: Physical allergy. Exhibit of illnesses and deformities caused by physical agents such as light, heat, cold and mechanical irritants, and indirectly in the case of heat sensitiveness by the effect of physical or mental effort; motion pictures, illustrating effect of physical agents on sensitive patients and methods of relief and course.

ETHAN FLAGG BUTLER, Chest Clinic, Arnot-Ogden Memorial Hospital, Elmira, N. Y.: Physiology of respiration: (a) efficiency of pulmonary ventilation; (b) electrobronchographic studies. Exhibit of (a) graphs plotting the effect of exercise on the carbon dioxide content of the blood and the rapidity of return to preexercise levels in normal individuals and in the presence of selected and known pathologic conditions; (b) electrobronchographic studies on isolated lungs and on the living subject with special reference to the normal curve and to variations due to stimulation of the various components of the autonomic nervous system; (c) reduced roentgen-ray records of pathologic conditions.

CLAIRE L. STRAITH, Detroit: Facial reconstructive surgery. Exhibit of enlarged photographs before and after the correction of various congenital deformities, acquired by accident and disease; several plaster busts on which will be demonstrated different types of appliances used in the treatment of severe fractures of the jaws and other facial bones; photographs, drawings and roentgenograms illustrating various methods of treatment.

CHARLES NORRIS, HARRISON S. MARTLAND, A. O. GETTLER, M. HELPERN, B. M. VANCE and A. V. ST. GEORGE, Department of Forensic Medicine, New York University, University and Bellevue Hospital College, Chief Medical Examiner's office, New York, and Chief Medical Examiner's Office of Essex County, Newark, N. J.: The medical examiner's office (organization and character of work). Exhibit will show charts and statistics showing the operation of the offices of the Chief Medical Examiner of New York City and Essex County (Newark) New Jersey; photographs, charts, drawings,

moulages and specimens showing (1) some of the important medicolegal lesions encountered; (2) position of body and surroundings at seat of crime; (3) poisons extracted from the organs of homicides, suicides, and the like; various instruments used in famous murder cases; (4) outfits used by drug addicts; (5) various kinds of poison liquids.

EDUCATIONAL CLASSIFICATION

Government and National Organizations

The educational exhibits include those exhibits from national and state organizations and government institutions which are put on in the name of the institution rather than of individuals and which are intended to show progress in the particular activities with which those institutions deal.

HEART COUNCIL OF GREATER CINCINNATI, Cincinnati: Heart disease in Cincinnati. Exhibit of a graphic description of the set-up for control, study and treatment of heart disease in Cincinnati. The interrelation of medical, voluntary and official health agencies through individual, hospital, clinic and field services. Research studies on the extent of cardiovascular diseases among a large number of "apparently well" employed persons. Clinical research studies on series of different types of heart disease with illustrations and specimens. Display of methods and materials utilized in health education on the prevention of heart disease.

CHILDREN'S BUREAU, U. S. Department of Labor, Washington, D. C.: Maternal mortality studies by the Children's Bureau. Exhibit of charts showing results of Children's Bureau studies of every death from puerperal causes in thirteen states in 1927, and in those thirteen states and two others in 1928.

LOUIS I. DUBLIN, Metropolitan Life Insurance Company, New York: Medical statistics. Exhibit of descriptive charts and graphs on (1) mitral regurgitation and subsequent mortality; (2) pleurisy and subsequent mortality; (3) results of sanatorium treatment of tuberculosis; (4) medical impairments that cause rejection for insurance.

NATIONAL TUBERCULOSIS ASSOCIATION, New York: Pathologic peculiarities of tuberculosis in the American Negro. Exhibit of transparencies, graphs, roentgenograms, gross and photomicrographs of specimens.

AMERICAN SOCIAL HYGIENE ASSOCIATION, New York: The modern conception of gonorrhea. Exhibit of charts, colored drawings, photographs, microscopic slides and motion pictures illustrating the modern ideas on the microscopic and serologic diagnosis, the microscopic pathology and treatment of gonococcal infections. Contributors to this exhibit are as follows: EMILY DUNNING BARRINGER, New York: Complement fixation test in gonorrhea, its usefulness in differential diagnosis and proof of cure. ANSON L. CLARK, Mayo Clinic, Rochester, Minn.: Treatment of gonococcal urethritis in the male. ALFRED COHN, Germany: Complement fixation test in gonorrhea. EDWARD L. KEYES, New York: Some points in the treatment of gonorrhea. ERICH LANGER, Germany: Skin test for gonorrhea. P. S. PELOUZE, Philadelphia: Diagnosis, clinical course and treatment of gonorrhea.

PHILIP B. MATZ, Medical and Hospital Service, Veterans Administration, Washington, D. C.: Clinical and pathologic residual effects of warfare gassing. Exhibit of (1) epitomized case histories of men gassed with chlorine, mustard, phosgene and arsine during the World War; (2) roentgenograms and other material showing diseases and conditions that have resulted from warfare gassing incurred during the World War.

WISCONSIN ORTHOPEDIC SCHOOLS, Crippled Children Division, Madison, Wis.: Exhibit of charts showing (1) statistical information; (2) transportation facilities; (3) special seating and other academic equipment; (4) rest rooms and dining rooms; (5) physiotherapy equipment; (6) physiotherapy treatment methods and hydrotherapy; (7) motion pictures showing work of Wisconsin Orthopedic Hospitals and Schools.

AMERICAN COMMITTEE FOR THE CONTROL OF RHEUMATISM, Philadelphia: Chronic rheumatism or arthritis. Exhibit of placards illustrating importance of disease economically, socially and medically; plaster casts, bony and other specimens, and photographs, illustrating main types of the

disease; roentgenograms, lantern slides and microscopic sections illustrating the differences in these types; placard giving prodromal symptoms of arthritis, and also one affording a scheme or outline of factors influencing the onset of and recovery from chronic arthritis. A pamphlet prepared in conjunction with the Committee on Scientific Exhibit of the American Medical Association will be distributed. The members of the American Committee for the Control of Rheumatism in charge of this exhibit, most of whom will demonstrate, are as follows: RALPH PEMBERTON, chairman, Philadelphia; RUSSELL L. CECIL, New York; A. A. FLETCHER, Toronto; RUSSELL L. HADEN, Cleveland; P. S. HENCH, Rochester, Minn.; MELVIN S. HENDERSON, Rochester, Minn.; JOSEPH L. MILLER, Chicago; GEORGE R. MINOT, Boston; J. ARCHER O'REILLY, St. Louis; ROBERT B. OSGOOD, Boston; CYRUS C. STURGIS, Ann Arbor, Mich., and HANS ZINSSER, Boston.

AMERICAN PHYSIOTHERAPY ASSOCIATION, Chicago: Exhibit of posters showing (1) minimum requirements for the training of physiotherapists; (2) scope of physiotherapy; (3) motion picture showing gaits of infantile paralysis; (4) motion picture showing approved methods of massage.

AMERICAN ASSOCIATION OF HOSPITAL SOCIAL WORKERS, Chicago: Medical social work. Exhibit of a series of charts and scientific reports on (1) functions of the social worker in hospitals; (2) organization of a social service department in a hospital and its relationship to other departments; (3) social factors in the study and treatment of disease in some diagnostic groups.

UNITED STATES PHARMACOPEIAL CONVENTION, Washington, D. C.: The United States Pharmacopeia. Exhibit of historical material connected with the past revisions of the United States Pharmacopeia with a display of pharmacopeial drugs and preparations and prescriptions embodying the official products.

AMERICAN HOSPITAL ASSOCIATION, Chicago: Hospital construction, maintenance and operation; hospital procedure; outpatient service and general hospital information. Exhibit of statistical graphs, package libraries, transparencies and other material that is informative to the hospital field and members of the medical staffs of hospitals.

AMERICAN PHARMACEUTICAL ASSOCIATION, Baltimore: National Formulary. Exhibit of valuable National Formulary preparations.

NATIONAL BOARD OF MEDICAL EXAMINERS, Philadelphia: Exhibit of charts describing the work and progress of the National Board of Medical Examiners.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, New York: Cancer of the breast. Exhibit of material on cancer of the breast; charts showing incidence and cure by various types of treatment; microscopic sections of whole breast showing the cancerous condition in relation to the entire breast and the surrounding areas; development of mammary tubule with subsequent cancerous degeneration (in mice); pictures showing methods of transillumination of the breast; a short version of the Cinti motion picture film; program of educational work carried on by the American Society for the Control of Cancer with county medical societies in various areas in the United States.

AMERICAN HEART ASSOCIATION, New York: Rheumatic heart disease. Exhibit on the newer concept of rheumatic heart disease covering (1) the incidence in various sections of the United States; (2) pathology as to both the heart and the systemic manifestations of rheumatic fever; (3) symptoms and physical observations including electrocardiographic alterations; (4) clinical course; (5) preventive treatment, treatment during the active stage of infection, subsequent treatment. These will be presented by charts, graphs, outline drawings, photomicrographs, roentgenograms and electrocardiograms; gross specimens for pathologic demonstration. The following individuals are contributors to the exhibit: ALWIN M. PAPPENHEIMER and WILLIAM C. VONGLAHN, New York: Photographs illustrating vascular lesions in rheumatic disease. CARY EGGLESTON, New York: Factors in the treatment of rheumatic heart disease. ARTHUR M. MASTER and HARRY L. JAFFE, New York: Electrocardiogram in acute rheumatic fever and in rheumatoid (infectious) arthritis. HOMER F.

SWIFT, New York: Rheumatic fever. J. R. PAUL and R. SALINGER, New Haven, Conn.: The incidence of rheumatic heart disease in urban, rural, poverty-stricken and well-to-do populations in and about New Haven. HOWARD B. SPRAGUE, T. DUCKETT JONES and EDWARD F. BLAND, Boston: Group of charts showing outstanding symptoms and signs as well as the progress in a large group of individuals with rheumatic infection. COMMITTEE FOR THE HOME CARE OF CHILDREN WITH HEART DISEASE, Boston: Home care of children with heart disease.

AMERICAN MEDICAL ASSOCIATION

The exhibits from the headquarters group of the American Medical Association will be found in various parts of the exhibition hall.

COUNCIL ON PHARMACY AND CHEMISTRY: Exhibit showing the work of the Council by means of posters, specimens, motion picture films and demonstrations.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS: Exhibit showing work of the Council relative to medical colleges and hospitals, and the certification of pathologists and radiologists.

BUREAU OF INVESTIGATION: The nostrum evil and quackery. Exhibit showing some mechanical fakes; the evolution of the "patent medicine" advertisement; some contemporary medical fakes; the work of the Bureau.

BUREAU OF HEALTH AND PUBLIC INSTRUCTION: What the public is thinking about health. Exhibit featuring the question and answer service to the lay public furnished by the Bureau; an analysis of questions and answers in 1932 by topics, plus maps showing the origin of questions by states.

COUNCIL ON PHYSICAL THERAPY: Exhibit consisting of motion pictures, charts and demonstrations substantiating the physiologic effects of physical procedures employed in physical therapy; continuous practical demonstrations of the therapeutic value of heat, massage, therapeutic exercise and hydrotherapy. The exhibit is under the supervision of the exhibit committee of the Council on Physical Therapy consisting of W. E. Garrey, Nashville, Tenn., Howard T. Karsner, Cleveland, and F. J. Gaenslen, chairman, Milwaukee, assisted by the following demonstrators: William Bierman, New York; John S. Coulter, Chicago; K. G. Hansson, New York; Disraeli W. Kobak, Chicago; F. H. Ewerhardt, St. Louis; Richard Kovacs, New York; Frank H. Krusen, Philadelphia, and C. O. Molander, Chicago.

BUREAU ON MEDICAL ECONOMICS: Exhibit of charts and maps dealing with the subject of medical economics.

AWARDS

There will be two classes of awards, consisting each of (a) a gold medal, (b) a silver medal, (c) a bronze medal and (d) three certificates of merit.

NOTE.—The special (subsidized) exhibits (Poliomyelitis Exhibit, Cancer Exhibit, Fresh Pathology Exhibit, and exhibit of Circulation of Blood in the Capillaries) and the exhibits of the headquarters of the American Medical Association are not open to awards.

CLASS I

Awards in class I are made for exhibits of individual investigations which are judged on basis of originality and excellence of presentation.

CLASS II

Awards in class II are made for exhibits which do not exemplify *purely experimental studies*, which are judged on the basis of excellence of correlating facts and excellence of presentation.

Medals are awarded only to individuals. A special certificate of merit will be awarded to the best educational exhibit in the Educational Classification (this includes exhibits by national organizations, etc.).

The jury on awards will be composed of five persons. It will make the decisions on Wednesday. The names of the jury will not be available until after the decisions have been published.

THE TECHNICAL EXPOSITION

To supply the requirements needed by physicians in the practice of medicine necessitates the cooperation of hundreds of manufacturing firms, the investment of many millions of dollars and the services of thousands of persons.

The technical exhibits at Milwaukee will, in reality, constitute a national exposition of this great industry. In Mechanics Hall, the visitor will find not only the newer and more significant products of 174 firms, but with them a staff of men who know intimately the technical details of each product as well as its application to the needs of the physician. New products, new ideas will be found throughout the hall. Among the books, the visitor will discover dozens of new works and new editions. In practically every exhibit of apparatus and instruments, new inventions or new ideas on technic will be featured. The important pharmaceutical manufacturers of the country will reflect their close contact with current progress by showing and explaining new drugs and biologicals. Food manufacturers will display accepted products

that have been designed to meet the special nutritional situations encountered by physicians. Altogether, Mechanics Hall, with its rows of attractive and well ordered displays, representing the leading manufacturers of the United States, will constitute a rare opportunity for garnering practical ideas and suggestions to be taken home and applied in the daily work.

The location of the technical exhibits, scientific exhibit and section meeting halls, all within one building, will make it particularly convenient for physicians to spend some time every day examining the products and services featured by exhibitors. The Technical Exposition will open at 8:30 a. m. on Monday morning. Closing hour will be 6:00 p. m. except on Friday, when exhibits will officially close at 12:00 o'clock noon.

Below are advance descriptions of many of the exhibits. Not all exhibitors have been able to supply information, but a complete list of exhibitors with booth numbers will be found on page 1543.

WILL C. BRAUN,
Superintendent of Exhibits.

BOOKS

New Volume of "Practitioner's Library"

D. Apple's "Practitioner's Library" exhibit their entire library of works in Booth 109. The first four volumes of the Library of Medicine are being just off the press. This important Library, to include 12 volumes and supplement-index, is under the editorial supervision of Dr. George Blumer. The display will also feature new editions of such well known Appleton books as Holt and Bowditch's "Diseases of Infancy and Childhood," revised by Holt and McIntosh, and Barlow and Yaler's "Symptom

in Tuberculosis Control"; Thoma's "Food in Health and Disease"; Looney's "Anatomy of the Brain and Spinal Cord."

Gray's Anatomy in 75th Year



Lea & Febiger, Booth 110, will exhibit The American Journal of the Medical Sciences, now in its 113th year, and Gray's Anatomy, now in its 75th year—and both going strong. New publications and new editions will include: Bridges' "Anatomy of the Human Eye"; Child's "Anatomy of the Human Ear"; and "Surgical Anatomy of the Human Eye." "Anatomy of the Human Eye" by Bridges, "Anatomy of the Human Ear" by Child, and "Surgical Anatomy of the Human Eye" by Bridges.

Shows "Recent Advances in Radium"

Among the books displayed by P. Blakiston's Son & Co., Inc., in Booth 109, will be "Recent Advances in Radium" (with 140 illustrations) by Ward and Smith of the Radium Institute, London. Others include Morris' "Human Anatomy," 10th edition; "Recent Advances" Series; Piney's "Diseases of the Blood," 2nd edition; and Piney and Wyand's "Clinical Atlas of Blood Diseases," 2nd edition.

Monographs of Many Publishers

The Chicago Medical Book Company, Booth 166, will have a complete assortment of all the newest publications of American and English publishers, including many new monographs of publishers not represented at this meeting. Here you can see them all in one exhibit, and save time.

The Cyclopedia of Medicine

The seven volumes of The Cyclopedia of Medicine (Piersol) now ready may be seen at the F. A. Davis Company's exhibit, Booth 142. These volumes, containing 1500 illustrations, represent the work of the editorial staff with the collaboration of over 300 of the 600 contributors actively engaged in completing the twelve volumes comprising the entire work. Other new books worth seeing include: Bland's "Practical Obstetrics," Goldberg's "Procedures

nary Arteries"; Sutton and Sutton's "Introduction to the Study of the Human Body"; "Synopsis of the Human Body"; "Changes of the Human Body"; "Diseases of the Thyroid Gland"; Vaughan's "Allergy"; and Miller's "Clinical Gynecology."

"Gastric Acidity"—a Feature

The newest Macmillan Medical Monograph, "Gastric Acidity," by Arthur L. Bloomfield and W. Scott Pollard, will be on display with other new and outstanding medical monographs of The Macmillan Company in Booth 95. Included are other recent books in this series, of which Dr. George R. Minot is editorial adviser—White's "Heart Disease"; Capps' "Pain in the Pleura, Pericardium and Peritoneum"; Rackemann's "Clinical Allergy"; and Clifford's "The Sputum."

Complete Loose-Leaf Systems

In Booth 49 Thomas Nelson & Sons will show complete sets of the Nelson Loose-Leaf Systems of Medicine and Surgery, kept up to date by adding 500 or more new pages each year. The rapid progress of medicine has made imperative the revision of entire sections, such as Blood, Nervous System, Cardiovascular System, etc., rather than that of single chapters. In Surgery the section on Surgical Obstetrics has been completed, many chapters have been revised, and several thousand illustrations are included.

New Work on Physical Therapy

W. F. Prior Company will again demonstrate how economically the physician can constantly keep abreast of new developments by the use of their Threefold Service. But this year they will have a new outstanding work in addition to their Tice's "Practice of Physical Therapy" and Lewis' "Practice of Surgery." The firm has recognized the need for a comprehensive treatise which would actually dovetail the usual medical and surgical procedures with those physical therapy measures which have proven of the greatest value. The result is

Every Day Practice Series

J. B. Lippincott Company will feature "The Every Day Practice Series," edited by Harlow Brooks and consisting of monographs on important every-day subjects by eminent writers. Included in their display in Booth 16 will also be the new "Practical Fractures," by Magnuson; the new Fuchs' "Diseases of the Eye," translated by E. V. L. Brown; the new "Operative Surgery," by Kirschner, translated by Ravdin and familiarly known as the Color Surgery; "Children's Tonsils In or Out," by Kaiser; "Surgical Errors and Safeguards," by Thorck; "Tumors of the Breast," by Cheate and Cutler; and the full Lippincott line of standard texts on medicine, pharmacy and nursing.

Mosby Displays New Books

Among the outstanding new books to be displayed in Booth 78 by The C. V. Mosby Company, will be the following: Lower and Nichols' "Roentgenographic Studies of the Urinary System"; Horsley's "Surgery of the Stomach"; and Sutton and



"Principles and Practice of Physical Therapy," by Pemberton, Moek and Coutter. Stop and see this significant work. Booth 141.

Books Show Year's Progress

Many new advances of the past year are set forth in the new books and new editions to be shown by W. B. Saunders Company in Booth 20. Of particular note will be: Volume VII of Bickham; the new Callander Dorrance; Cleft Palate; "Medical"; Kelly, and Wards "Electro-Surgery"; and new editions of De Lee's "Obstetrics."

Publishers Co-operate in Exhibits

A joint exhibit of medical and other scientific books published by William Wood and Company, The Williams and Wilkins Company, and the New York branch of the Oxford University Press, will occupy Booths 166 and 167. Many valuable new books and new editions by American authors will be shown under each of the three imprints, and also the largest display of works by foremost British medical authors ever brought together in one A. M. A. convention exhibit.



DIETETIC SUPPLIES

Battle Creek Food Company to Show Lacto-Dextrin



The Battle Creek Food Company will exhibit Lacto Dextrin, a pure saccharide preparation for use with or without cultures to restore the aciduric organisms in the colon. The principle involved is that the Lacto Dextrin feeds the friendly bacteria thus encouraging their extensive growth, while putrefactive and undesirable bacteria are crowded out. The conditions in which this change is of value naturally suggest themselves. Savita,

a brewers' yeast and vegetable extract, which makes yeast therapy pleasant for the patient, will also be shown, and will be served as an appetizing bouillon throughout the Convention at Booth 71.

To Show Curds of Various Milks

A noteworthy feature of the Carnation Milk Company's display in Booth 41 will be curds of various milks on precipitation by an artificial Eastrie juice. Another interesting exhibit will show the fat globules as found in several widely used non-proprietary milks. Chemical analyses of both raw and evaporated whole cow's milk will be presented, together with other material bearing on recent progress in infant feeding. A competent staff of chemists will be in attendance.



For Sugar and Starch Restricted Diets

The Chicago Dietetic Supply House, Inc., will show many food products that are adaptable to diabetic and ketogenic diets, and will demonstrate equipment necessary to facilitate the home management of these cases. Plan to stop at Booth 53, where Miss Lida Jamison will explain food values of Cellu Products and give complete information on any item in which you are particularly interested.

Facts About Carbohydrates

The Corn Products Refining Company will occupy Booth 140, which is located nearby the registration tables. They will have a large size space, attractively decorated and made comfortable for visiting physicians, who are most cordially invited to register at the booth. Karo and Dextrose (d-Glucose) will be featured at the booth. These products, accepted by the Committee on Foods of the A. M. A., are in wide medical use. Karo, rich in Dextrin, Maltose and Dextrose, is the combination of carbohy-

drates which is now generally prescribed for bottle-fed babies. Dextrose (Cerelease) U. S. P. X (d-Glucose) conforms to U. S. P. specifications. Remedial uses of Dextrose are of increasing importance to the medical profession.

Clapp's New Tin Container

During the twelve years since Harold H. Clapp, Inc. offered the first line of prepared baby foods to the medical profession, this company has adhered to its original policy of packing in glass. But it has not failed to keep pace with technical progress. The efforts of its laboratories assisted by research of various tin manufacturers has resulted in an entirely new type of tin container. After exhaustive tests, Clapp Company is ready to package its entire line in this new container as well as in the original glass. The first public exhibition of the new package at the Clapp Company Booth 28 will be of interest to all physicians engaged in infant practice.



Palatable Foods for Diabetics

As the death rate from diabetes redoubles, foods which furnish ample nutriment yet are moderate in protein and fat as well as carbohydrate, increase in importance. The Cardolac Food Company will display palatable and attractive foods for the diabetic, and will display the foods from which they are made. A number of the products are suitable for use in ketogenic and bland diets also. You are invited to stop at Booth 29 and taste the tempting pastries made without carbohydrate.

To Serve Cocomalt to Visitors



Cocomalt, the scientific food concentrate that supplies rich Vitamin D content in a particularly delicious form, will be exhibited by the R. B. Davis Company for the fifth successive year. Miss Elsie Stark, director of the home economics department, will be in charge of the Cocomalt exhibit. Visit Booth 116 and enjoy some delicious Cocomalt. Interesting scientific data will be available to those who desire it.

Of Interest to Pediatricians

The Dry Milk Company, Inc., will exhibit Irradiated Dryco, which has been successful in clinical use, and in conjunction with it the products of the affiliated companies: the new palatable milk sugar, Beta Lactose, manufactured by the National Milk Sugar Co., Inc.; and the Merrell-Soule prescription products, Klim Powdered Whole Milk and Powdered Whole Lactic Acid Milk. See these valuable aids in infant nutrition in Booth 68, where data and samples will be available and where souvenirs will be distributed.



A New Gerber Item

During the past year a new Gerber item has been introduced—a ready-prepared, long-cooked and strained cereal prepared especially for infant starting cereal. Containing added wheat germ and cooked in whole, fresh milk, it adapts itself to many uses in controlled diets. Full information concerning this and other Gerber items will be available in Booth 38.



To Feature Embo, a Dietary Adjunct

The Technical Research Department of General Mills, Inc., will, in Booth 26, feature Embo, their development on the use of wheat embryo (germ) as a dietary adjunct which can be prescribed in the treatment of certain nerve disorders, malnutrition and anemia, when vitamin B deficiency is the cause of the subnormal condition.



Other products on display in this booth will be the Wheaties, Gold Medal "Softasilk" Cake Flour, "Bisquick" and Gold Medal "Kitchen-tested" Flour, all of which have been accepted by the Committee on Foods of the A. M. A. Any information desired on Embo or other products displayed can be obtained from the booth attendant.

Register for General Foods' Gift Package

At General Foods' exhibit in Booth 111, you will relish a cup of Sauka Coffee, a blend of finest Central and South American coffees from which 97% of the caffeine has been removed. Cookies made from Post's Whole Bran will also be served, and other General Foods products of special interest to physicians will be on display. These include Post's Bran Flakes and D-Zerta, a sugar-free gelatin dessert for diabetics. A special gift package containing these products will be sent to physicians who register at the General Foods booth.

Have a Drink of Dole Pineapple Juice

Dole Pineapple Juice, displayed by the Hawaiian Pineapple Company in Booth 92, is a new product that will appeal to all who are interested in pure fruit juices as an important part of the daily diet. It has many known nutritional properties, and contains no muss or fuss in serving. Its value in the diet of children and as a source of Vitamins A, B and C, of mineral salts, food acids, and natural sugars, will be shown. Call at this exhibit for a drink of natural golden juice of fresh, ripe pineapples. You will find it refreshing and unusual.



New Facts about Baby Feeding

In addition to displaying an interesting line of products, H. J. Heinz Company will have a member of its Research Department at the 57 Varieties exhibit. He will be prepared to present new facts about baby feeding, from a scientific viewpoint, as well as labor-saving methods for mothers. The Heinz line of baby foods, including tomato juice, strained spinach, carrots, peas, green beans and mixed vegetables, will be displayed. The cereal department will be represented by Rice Flakes and Breakfast Wheat, and Olive Oil from the company's Seville (Spain), plant will be shown, with adequate information pertaining to it. Booth 153.



Food Values of Oleomargarine



answered by representatives of the John F. Jelke Company in Booth 149. Literature in connection with the vitamin content and nutritional values of Good Luck Margarine will be freely distributed.

Mead Johnson's New Cereal

Pablum, Mead Johnson & Company's unique new cereal which is precooked and enriched with vitamins and minerals, will be demonstrated as one of the features in their exhibits in Booths 132 and 133. Physicians will have the opportunity to see how easily and deliciously Pablum can be made into a cereal feeding simply by mixing it directly in the cereal bowl with water or milk (hot or cold). Displays showing how Pablum compares with the principal foodstuffs in content of such essential minerals as calcium, phosphorus, iron and copper will also be on view. See also special exhibits in spaces 10, 76 and 77.



Larsen's Strained Vegetables

In Booth 91 a new brand of strained vegetables produced by The Larsen Company, Green Bay, Wisconsin, will be exhibited. They were recently accepted by the Committee on Foods and are priced to retail at ten cents. The exhibit will show nine varieties, strained unseasoned, ready for use—peas, spinach, carrots, beets, green beans, etc., prunes, tomatoes, and vegetables with cereal and beef broth. Only selected fresh vegetables are used, and the latest and best practice employed for preserving the full nutritive value of the vegetables will be discussed by attendants.



Have a Cup of Kaffee Hag!



Kaffee Hag Coffee with 97% of the caffeine removed and All-Bran cookies will be served to visitors at Booth 67 by Miss Mary I. Barber and Mrs. Winifred B. Loggans of the Home Economics Department of Kellogg Company. They will also have a display to show the nutritional value of All-Bran as a source of Vitamin B and food iron, based upon research work done in leading nutrition laboratories. The importance of All-Bran in the low calorie diet and comparison of 2 tablespoons of All-Bran in iron and Vitamin B content with other commonly used foods will be shown.

New Formula Card for Infant Feeding

The Mellin's Food Company has recently made available to physicians a new formula card for infant feeding which will be shown in their exhibit in Booth 86. This card has been prepared after extensive conferences with many authorities and is based on their collective opinions. The Mellin's Food Company believes that the formulas and other suggestions are in accord with current scientific knowledge and practice and represent safe and adequate feedings for average normal infants. Their distribution is limited to physicians, as is all the Company's advertising.



Charts for Planning Diets



In the exhibit of The National Live Stock and Meat Board in Booth 59, charts and found in normal foldable form. Recent research on protein, fat and mineral metabolism and the place of meat in all types of diets also may be obtained. The dietitian in charge of the booth will be glad to make suggestions on the uses of the printed material.

New Modifier of Cows' Milk

Hylac, the new modifier of cows' milk for infants, will be featured in the exhibit of Nestlé's Milk Products, Inc., Booth 165. Physicians interested in the adaptation of fresh cows' milk for infant feeding will have the opportunity to familiarize themselves with this new modifier which makes it possible to naturalize the artificial feeding in proportions of fat, carbohydrate and protein. Representatives in charge of this exhibit will gladly supply detailed information on Hylac to all physicians who visit the Nestlé booth.

Curd Tension and Similac

Curd tension and infant feeding seems to be a pretty generally discussed subject among physicians who are feeding babies deprived of breast milk. The M & R Dietetic Laboratories, Inc., exhibiting in Booth 85, have consistently used this feature in their advertising. Representatives who will be present will gladly explain the application of their product, Similac, to the feeding of those infants deprived of breast milk, and also the features of the low curd tension of Similac.



Page Evaporated Milk

The exhibit of The Page Milk Company will occupy Booth 147, where representatives will be pleased to discuss the use of evaporated milk in the normal diet and in the diet of infants. All physicians attending the Technical Exposition are cordially invited to call at the Page booth.

New Dietary Factor from Milk Serum

In Booth 30 the Protein Mineral Company, Inc., will exhibit P M C, a new research product derived from the whey fraction of milk. P M C contains the calcium and other salts of milk in the same form in which they are present in the whey frac-

tion and with its natural lactose content. A freely soluble pleasant powder, P M C is a source of easily assimilable mineral salts of milk for use in the diet of children, convalescents, and respiratory and tuberculosis patients. Taste P M C when you visit this exhibit!

Tasty, Tree-Ripened Fruit Juices

After many years of research work, Dr. P. Phillips Company has developed a process, on which it holds the patent rights, to can pure orange juice, pure grapefruit juice, and fancy grapefruit hearts, retaining to a high degree the Vitamin C and other nutritional values of the fresh fruit. Dr. P. Phillips Company owns several thousand acres of grove property in Florida, and uses only tree-ripened, fully matured fruit. Visit Booth 62 and receive samples and information.



Ralston Cereal Products

In Booth 50, the Ralston Purina Company will show Ralston cereal products, including the new infant cereal, Baby Ralston, specially designed to be the baby's first cereal food, which requires a short time for cooking and provides an excellent source of appetite-stimulating Vitamin B. Ralston Wheat Cereal which now contains an added amount of wheat germ to provide extra Vitamin B for the growing child; and Ry-Krisp, the Whole Rye Wafer for wheat allergy diets. A booklet, "Special Recipes, Menus and Food Lists for Wheat, Egg, and Milk-Free Diets" will be available to interested physicians.



Milk for All Types of Individuals

S. M. A., the well known antirachitic breast milk adaptation, will be featured by the S. M. A. Corporation, as will also their Hypo-Allergic Milk for milk sensitive individuals—offered for the first time in powdered form. Alerdex, the protein-free maltose and dextrins which was announced about a year ago and which has been rapidly gaining favor for home modified milk formulas, will also be exhibited in a newly designed, attractive package. Be sure to visit both S. M. A. Booths, 124 and 134.



Kemp's Sun-Ray'd Tomato Juice

The exhibit of The Sun-Ray'd Company, Division of Kemp Bros. Packing Co., Frankfort, Indiana, will include an attractive display of Kemp's Sun-Ray'd Tomato Juice in glass and metal containers. Attention of physicians will be called to the Sun-Ray'd "Whole-Press" Process for converting whole tomatoes into a full-bodied, non-separating juice, and the scientific methods of vitamin retention employed. Complimentary samples of the product will be distributed. Booth 89.

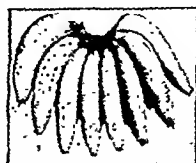


To Show Feeding Tests

The Vitamin Food Company, Inc., will show the use of Vegex in child feeding. In addition to several hundred feeding charts, 96 animals will be under feeding tests with the daily weights charted above each cage, and showing the vitamin value of the main foods in the average diets of both children and adults. Booth 32.

Have a Delicious Ripe Banana

With the growing importance of bananas both as a staple food and in the diet of patients suffering from certain diseases, the educational exhibit of the United Fruit Company, in Booth 90, should be of interest. In recent years the banana has been subjected to much research and the United Fruit Com-



pany is prepared to furnish the latest data on this tropical fruit as developed in the laboratory and hospital clinic and to show that the banana as a fresh fruit and a substantial food is an important factor in the diet from infancy to old age.

INSTRUMENTS AND APPARATUS

New Popular Priced Furniture

The W. F. Hanes Company, who have long been class physicians' of play a scular-priced Metropolitan furniture for the treatment room; also one of their famous Hanes tables that has proved so universally used and liked by rectal specialists as well as the general profession in all parts of the world. Be sure to visit Booth 188 when you are at the convention.



Complete Range of Surgical Lights

The American Surgical Lamp Company exhibit in Booth 198 will consist of a complete showing of its line of both portable and ceiling mounted surgical operating lamps. The ceiling mounted equipment features color correction that provides a powerful light free from the glare which ordinarily accompanies a strong light, and the arrangement of the reflectors provides for unusual penetrating depth and freedom from shadows. The portable equipment includes many desirable features not found on other operating lights.

To Feature New Operating Scissors

The Bard-Parker Company exhibit, Booth No. 12, will feature their new 5 1/2" operating scissors with renewable edges in three styles of points. Also included in the exhibit will be renewable edge dissecting scissors, detachable blade knives and a germicide for instrument sterilization. The germicide exhibit will show comparative effects of several sterilizing mediums upon metabolic instruments.



New Baumanometer Models

The Baumanometer exhibit of W. A. Baum Co., Inc., at Booth 101, will feature two entirely new KOMPAK Models, developed in Cast Duralumin. Being solid cast metal, they possess mechanical advantages of great strength, extreme lightness and durability that cannot be duplicated in any other material. The weight of the complete instrument is only 30 ounces. These latest Cast Duralumin Baumanometers are not only new in both design and finish, but more easily pocketable because of the studied rounding of all edges and corners.

To Show a Factory Scene

Those who visit the Beeton, Dickinson & Co. exhibit will have the opportunity of seeing factory experts actually making B-D products, such as fever thermometers and hypodermic syringes, and may gain a first hand knowledge of the selection and care of syringes, needles and clinicals. B-D

B-D PRODUCTS

Made for the Profession

products of unusual interest which will be shown include new blood transfusion equipment of improved design, the latest in blood pressure instruments made of bakelite, improved Aspetto (bulb) Syringes and the new Medical Center line of syringes and needles. Booths 23, 24 and 25.

New Electrically Lighted Instruments

Cameron Surgical Specialty Company will display a complete line of their electrically lighted instruments for diagnosis. Their new colposcope, the Tele-Vaginalite, sizes with 10x Tele-lens, show the Cameron internal portable Radio middle current control, which is one of the noteworthy innovations of electro-surgery offering complete assurance of safety when cutting in a wet field and is particularly adapted to the prostatic resection operation. Booth 42.

To Demonstrate Electrocardiographs

Cambridge Instrument Company, Inc., of New York and Chicago, will exhibit and demonstrate their new Hindle "All-Electric" model Electrocardiographs. These instruments are a distinct advance in electrocardiographic design in that they operate directly from the house lighting current without the use of storage batteries heretofore required. Both the Mobile and Portable types will be demonstrated in Booth 46.

New Betz Centrifuges and Sterilizers

The Frank S. Betz Company's exhibit, in Booth 101, will include a wide line of equipment, instruments and supplies for general practice, as well as for many specialties. Physicians are invited to visit this exhibit and view the new Betz Electric Centrifuges and Sterilizers. Special premium offers will be made.

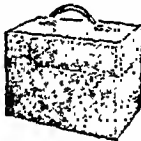
**The "Lifetime" Sterilizer**

That a doctor today expects his sterilizer to "last a life-time" is the belief of the Wilmot Castle Company, and their exhibit will show clearly how the Castle Cast in Bronze Sterilizer differs materially from sheet metal construction, and why it cannot warp, buckle, crack, or leak, even if abused. Attendants will tell you of the detailed care put into making the boilers entirely of a one-piece casting, and will demonstrate

all other features, such as the "Full-Automatic" heat control which provides low water cut-off and automatic temperature regulation while in use. Booth 4.

New Prostatic Resection Apparatus

The Comprex Oscillator Corporation will exhibit, in Booth 160, several new and interesting instruments for intra-urethral prostatic resection and a recently perfected Thoracoscope of improved design. Latest types of vacuum tube electrosurgical units designed for use with these instruments and for electrosurgery will be displayed and demonstrated, and in addition there will be a comprehensive assortment of cauteries, cystoscopes and diagnostic instruments.

**To Show Surgical Motion Pictures**

At Booth 196, Davis & Geck, Inc., will display their complete line of sterile surgical sutures including boilable and non-boilable (extremely flexible) catgut. Several new and interesting products will be introduced. A feature of the exhibit will be the continuous showing of surgical motion pictures, including many new films. Arrangements for use of D&G films without charge by medical societies, schools, hospitals and other professional organizations may be made through the representative at the booth.

Fine Furniture at Moderate Prices

Demonstrating that truly fine furniture for physicians need not be prohibitively priced, Enoch's Manufacturing Company will have on display two complete suites in Booth 191. Many new and exclusive features are promised, and W. R. Enoch's declares that the price tags will be a pleasant surprise. "We are making fine furniture and pricing it so reasonably," he says, "that no practitioner need deny himself the satisfaction and prestige that results from a thoroughly modern office."

**New Atomizer Feature**

The DeVilbiss Company, Toledo, Ohio, manufacturers of medicinal atomizers, will exhibit in Booth 163. The outstanding feature of this exhibit will be the new vented nasal guard which eliminates any possibility of excess pressure in the nasal cavities during prescribed self-treatment. In addition, a complete line of DeVilbiss Atomizers and Vaporizers (Nebulizers), for both home and professional use, will be displayed. E. J. Corfield will be in charge. All visitors to the convention are cordially invited to stop at this exhibit.

X-Ray Aluminum Splints

DePuy Manufacturing Company will exhibit new style splints in Booth 80, the Adjustable Rocking Leg Splint, Campbell Aeroplane, Forrester Head Sling for cervical fractures, and Cayo Reduction and Extension Leg Splints. Many other items of interest will be on display, and DePuy representatives will gladly extend you any courtesy when you call.

**Modern Furniture**

The Hamilton Manufacturing Company will exhibit in Booths 55, 56, 63 and 64, with other pieces of modern medical furniture, an unusual cabinet for the eye, ear, nose and throat specialist. It is so arranged that when it is closed all of the instruments are concealed. This cabinet also has an automatic, disappearing bottle rack which has several novel features. A special sink is built into the cabinet which contains several compartments for washing and draining instruments.

Drybak Waterproof Adhesive

Johnson & Johnson will show their Drybak Waterproof Adhesive which makes it possible for patients to bathe although strapped with the adhesive. Other new products to be exhibited in Booth 117 will include Cotton Balls, machine made, for the doctor's office and hospital use; Plaster of Paris Splints, ready for immediate use; Ethicon non-boilable, heat sterilized Catgut Sutures; and, of course, the famous Red Cross line including Red Cross Cotton, "ZO" Adhesive, Red Cross Gauze and the new "Neat Edge" bandage.

Portable Traction Apparatus

The exhibit of E. H. Karrer Company, Booth 36, will feature Lemon's Improved Portable Traction Apparatus, which is of great service in fractures and in all open operations upon the long bones of the lower extremities. Details of its use will be explained by competent attendants.

Blood Chemistry Outfits

LaMotte Simplified Blood Chemistry Outfits for the physician will be exhibited at Booth 146. The operation of the methods will be demonstrated for those who wish full information.

Complete outfits will be on display covering such tests as Blood Sugar, Blood Urea, Urine Sugar, Urinalysis, Blood Calcium-Phosphorus, Lactone Index, Renal Function Tests, and the new Kline Precipitation Test for Syphilis. Physicians registering at the booth may obtain a complimentary copy of the LaMotte Blood Chemistry Handbook.

**Operating Room Ensemble**

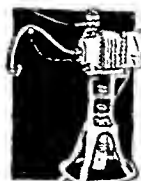
Seaton-Morris Company will demonstrate the efficiency of the famous operating room ensemble, consisting of:



surgical light. The Hawley-Seaton fracture x-ray and orthopedic table built for Dr. G. W. Hawley, Bridgeport, Conn., also will be shown, as well as the Wisconsin oxygen humidifier for use in the oropharyngeal catheter method of oxygen administration, the Head blood transfusion apparatus, and Seaton Laboratories' high heat sterilized sutures.

Jones Metabolism Apparatus

In Booth 157, the Middle-west Instrument Company will show many features of interest in connection with the Jones Metabolism Apparatus. In its contact with physicians, the firm is constantly on the lookout for means of rendering better service through new developments and new features in its apparatus. Many such new ideas will be presented at the exhibit. Basals and Motor Basals priced from \$150 to \$275 will be shown, and the ease of operation fully demonstrated by skilled attendants.

**New Colorimeter**

The Vim-Sheftel Colorimeter will be one of the MacGregor exhibits in Booth 83. This instrument that eliminates the color process; all series of color liquids that fade. It is compact and portable, easy to operate and inexpensive. With it can be done blood sugars, hemoglobins, ureas, NPNS—all ordinary blood tests. Visitors at this exhibit will see this efficient colorimeter and will receive a 52-page manual which describes simplified methods of blood chemistry with the Vim-Sheftel Colorimeter.

Large Display by Mueller

V. Mueller & Co. will exhibit their usual interesting and complete line of surgical instruments and equipment, including many new developments in the various branches of surgery. You will see on display here the new types of blood pressure instruments, resectoscopes, and the Vim-Sheftel colorimeter. Ask for complete details on the new Herb-Mueller Ether Vapor and Vacuum Apparatus. Booths 106 and 107.

**For Prostatic Resection**

The Physicians and Hospitals Supply Co. will have an exhibit of many of the latest developments in the technical side of medicine. Among equipment items will be the Vim-Sheftel Colorimeter, the latest models of blood pressure and transfusion apparatus, metabolism machine, and many others. Among instruments shown will be the McCarthy Visual Prostatic Electrone pronounced "the last word" in prostatic resection. All physicians are invited to inspect this interesting display in Booth 159.

**Metabolism Testing**

Easy breathing, simplicity and accuracy by the 1933 Sanborn Motor-Gratic Metabolism Tester will be demonstrated in Booth 81 by the Sanborn Company. Here you may inspect the quiet running motor blower for circulation of air and oxygen; new oxygen shut-off valve; complete with oxygen tank. The new Sanborn two compact at patient's home battery directly from lamp socket or wall plug, will be featured.

Instruments for All Needs

A complete line of high grade surgical instruments, together with unusual specialties of interest to general practitioners and specialists will be displayed by Sharp & Smith in Booths 21 and 33. It will be well worth a few moments' time to look over this exhibit of attractively displayed quality merchandise.

Don't Miss This New Tycoos

Go to Booth 66, of the Taylor Instrument Company, and hit the glass tube of the new Tycoos Mercuial with a hammer! The makers of the famous Tycoos Aneroid at last have answered your demand for a DURABLE mercurial blood pressure instrument with a new Tycoos. It is made from a special Shock-Resisting Bakelite which can be knocked onto the floor time after time without even marring it. You will want to see the new scale construction which makes the instrument so much easier to read. And don't miss the famous Tycoos Aneroid, with its many new 1933 improvements. Booth 66.

**Optical Innovations**

The exhibit of Carl Zeiss, Inc., Booth 75, will feature an entirely new line of microscopes, the new Epi-Condenser for surface illumination, and the new slit-lamp equipment. In addition, contact glasses, replacing conventional frame glasses, and the new Georg Wolf flexible gastroscope will be shown. All of these represent the most advanced thoughts and incorporate the latest optical innovations. Representatives will be on hand to demonstrate the instrument and answer questions.



New Models of Treatment Outfits

In Booth 52, C. M. Sorensen Company, Inc., will have on display a number of new model treatment outfits; various efficient combinations of suction and pressure apparatus with accessories for the treatment of ear, nose and throat; a new deluxe model with coagulation, desiccation and fulguration; and a heavy duty abdominal aspirating outfit.

Fracture Appliances

Zimmer Mfg. Co. will have an exhibit of fracture appliances that will feature the newer types of this apparatus. The line has been increased by the addition of many items in which fracture surgeons will be keenly interested. You are cordially invited to visit Booth 113.

New Designs in Furniture

The Max Woehner & Son Company will show instruments for several of the specialties which emphasize some important developments. Accompanying the display of instruments will be several newly designed furniture items which have come to be classed as indispensable. This exhibit will attract more than a cursory interest, and you are cordially invited to examine it. Booth 27.



PHARMACEUTICALS and BIOLOGICALS

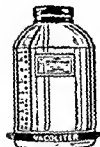
Advantages of Haliver Oil

Haliver Oil is to be featured by the Abbott Laboratories in an exhibit which has many points of interest. The method of fishing for halibut will be portrayed by an animated model and the actual tackle or "gear" used by the fishermen is to be on display. A special point will be made of the fact that Haliver Oil Abbott, as a potent source of Vitamin A, may be given in the summer time without adding appreciable calories to the diet. Other specialties such as the chemo-therapeutic agents developed in the Dermatological Research Laboratories in Philadelphia, the Ephedrine products and pollen extracts are to be shown. Booths 13 and 14.



Safer Intravenous Therapy

The American Hospital Supply Corporation will show the convenience and safety of Baxter Intravenous Solutions which are non-pyrogenic, prepared in fractionated, protein-free water, and are standard today in over 1,000 hospitals. Why these solutions constitute an advantage to physician, patient and hospital will be clearly demonstrated and explained in Booth 152. The latest equipment in oxygen therapy will also be shown. Ask for the Oxygenaire, the Simplified gas analyzer for determining gas concentrations in oxygen tents, and ask to see the catheter unit for nasal oxygen therapy.



Sources of Gland Preparations

Armour and Company, in Booth 137 will show their products of animal origin, along with their sources. With a vial of pituitary liquid will be the glands from which the substance is extracted. Thyroid glands from the throats of cattle, sheep and hogs, will illustrate the sources of many thyroid preparations. Dozens of other exhibits of this nature will be shown, and competent men will be in attendance at all times.



Theocalcin for Angina Pectoris

The Bilhuber-Knoll Corporation will display its complete line of Council Accepted medicinal specialties in Booth 35. Included will be the well-tolerated myocardial stimulant, Theocalcin, which is being satisfactorily used in many cases of angina pectoris. Ask for a tube of Bromural tablets, the sedative and hypnotic which is neither a bromide nor a barbiturate. Competent representatives, thoroughly familiar with the application of the various products, will be in attendance.



To Exhibit Liver Extract

The Chappel Brothers Laboratories of Rockford, Ill., will exhibit both types of liver extract, subcutaneous and oral, and will accept orders for professional samples in Booth 47. Slides will be shown demonstrating blood conditions in various types of anemia.



Exhibit Suggests Tradition

The Early American furnishings of Booth 38 will suggest the age and the thoroughly American tradition of Church & Dwight Co., Inc., makers of Arm & Hammer and Cow Brand Bicarbonate of Soda, established in 1846. These widely used brands of Baking Soda are identical, and are pure Sodium Bicarbonate of U. S. P. standard, a product of over 86 years' specialized experience.



Ciba Features Non-Narcotic Anesthetic

An interesting display of the Council accepted products of the Ciba Company, Inc., will be shown and discussed by trained representatives of the company in Booth 154. The exhibit will feature Nupercaine, "Ciba"—the non-narcotic local anesthetic of prolonged action; Dial, "Ciba"—the widely used hypnotic and sedative; Lipiodine, "Ciba"—a rapidly absorbable iodine in organic combination; Digifoline, "Ciba"—a uniform, purified preparation of digitalis physiologically standardized; and Vioform, "Ciba"—the antiseptic iodine dusting powder.



Davies, Rose Pharmaceuticals

This year, as in the past, visitors will find the exhibit of Davies, Rose & Co., Ltd., both interesting and informative. In Booth 119, Robert J. Mansfield and George F. Day will be present to explain in detail to callers the outstanding qualities of this firm's laboratory productions.

Effective Iodine Medication

Riodine (Astier), a convenient, palatable and effective form of iodine medication in which the incidence of iodism is reduced to a negligible factor, will be one of the specialties featured by Gallia Laboratories, Inc. Another will be Arheol (Astier), active principle of sandalwood oil with the therapeutically inert but irritating substances of the crude oil eliminated. Physicians are invited to stop at Booth 100 for samples and literature.

Efficacy of Cod Liver Oil Tablets



White's Cod Liver Oil Concentrate Tablets will be displayed by the Health Products Corporation in Booth 148. Representatives will describe their manufacture and show reprints of articles from authoritative sources giving undisputed clinical evidence of the uniform effect of these tablets.

Roche Specialties

Among the Hoffmann-La Roche products exhibited in Booth 168 will be the following: Digitalis, assayed by the Cat Method (Digalen 'Roche'); Opium Alkaloids (Papaverine Hydrochloride, Papaverine Sulphate ampules); other Alkaloids (Scopolamine Stable 'Roche' ampules, Homatropine Hydrochloride 'Roche'); Amino Acids (Synthetic Thyroxine 'Roche'—crystals, tablets, solution and ampules—and Tyramine 'Roche'); and other distinguished Roche medicinals. Members of the 'Roche' scientific staff will be present to discuss these with visiting physicians.



To Feature Liver Extract

The main feature of the Lederle Laboratories exhibit will be their Solution Liver Extract Parenteral, a concentrate which is supplied in packages of three 3 cc. vials. Charts showing the results of its application, as well as descriptive matter will be presented. Whole Leaf Digitalis Tablets Lederle will be shown in the containers in which they are dispensed. Pollen Antigens

Lederle will be featured by showing packages and full literature. Poison Ivy Extract Lederle, serums and other products of the Lederle Laboratories will be explained by competent representatives. Booth 79.

Mercurochrome

Hynson, Westcott & Dunning, Inc., will, as in previous years, have an exhibit at the technical exposition, which will be attended by competent members of the detail force. Mercurochrome powder, tablets and solution will be displayed and a supply of medical literature will be available to physicians. Diagnostic apparatus and representative packages of other products will also be exhibited. Booth 87.



Lakeside -- Made in Milwaukee Products



Milwaukee, the host to the American Medical Association, is the home of The Lakeside Laboratories, Inc., manufacturers of intravenous products. Visit Booth No. 96 where the Lakeside exhibit will feature ampules of dextrose, sodium cacodylate and calcium chloride for intravenous use.

Physicians are invited to spend their spare time at this booth and to make it a rendezvous for meeting friends.

Lilly to Have Two Exhibits

In the main exhibit of Eli Lilly and Company, in Booths 5 and 6, the synthesis of Amytal and Sodium Amytal will be graphically illustrated. The source of Ephedrine, the increase in its use in the United States in the past few years, and its important therapeutic forms will be presented. Liver Extract in the treatment of pernicious anemia, Iletin (Insulin, Lilly), and the progress in refinement and purification of Antitoxins will also be featured. Representatives from the medical staff of the Lilly Research Laboratories will be in attendance. In Booths 208 and 209 moving pictures will show the steps in the manufacture of Iletin (Insulin, Lilly), the first Insulin commercially available in the United States.

Research in Creosote

The first attempt in recent years to establish the relative efficiency of creosote, guaiacol, and other creosote constituents by means of laboratory tests is now under way through fellowship grants by the Maltbie Chemical Company, manufacturers of Calcreosol. At Booth 150, their representatives will have some interesting and valuable information relative to the researches in medicinal wood tar creosote under these fellowship grants to prominent universities and colleges. Physicians are welcome to liberal samples of Calcreosol which will be mailed to them if they will leave their name and address at the Maltbie booth, 150.

Light on Nutritional Problems

How products can be guaranteed for a definite known vitamin potency in respect to vitamins A, B, C, D and G, will be illustrated by the Maltbie Company in Booth 15. This exhibit will include specimens of raw materials as well as finished products. Among the products featured will be Maltine Plain, Maltine with Cod Liver Oil, Maltine with Cod Liver Oil and Iron Iodide, Maltine with Mineral Oil and Cascara Sagrada (non-bitter) and Certifoods. Illuminated pictures, photographs and photomicrographs will be shown and a means of introducing measured amounts of food substances into the diet will be demonstrated.



Antisiphilitic Preparations

Merck & Co., Inc., will exhibit a group of antisiphilitic preparations for the treatment of all phases of the disease. Included will be the well known Merck Arsyphenamines, Tryparsamide for neurosyphilis, and Bismosol. Other therapeutic agents, such as Digilina and Erythrol Tetratrate, will also be shown in the exhibit which will occupy Booths 18 and 19. Physicians will also be particularly interested in the exhibit of this well-known chemical firm at a Century of Progress Exposition in Chicago.

Novel Features in Mallinckrodt Display

Mallinckrodt will display an ideal prescription counter for a modern pharmacy. A survey has shown that nearly all prescriptions are filled from a comparatively small number of chemicals, and Mallinckrodt will feature these in what they call the "Famous 84," now offered to the pharmacists of the country. In addition will be their medical specialties such as Barium Sulphate for X-Ray of the gastro-intestinal tract; Iodolikon and Iso-Iodolikon, opaque mediums permitting x-ray of the gall-bladder; Ether for Anesthesia, and the Arsenicals. Interesting literature on the arsenicals and on cholecystography will be available to visitors. Booth 139.

To Show Sal-Ethyl Carbonate

Parke, Davis & Company will display their Haliver Oil, emphasizing its scientific aspects. Another section of the exhibit will be devoted to Sal-Ethyl Carbonate and its companion product, Sal-Ethyl Carbonate with Amidopyrin. Sal-Ethyl Carbonate makes it possible to push salicylate therapy without gastric disturbance. Anti-anemic preparations, with hemographs of clinical cases, will occupy a third section. A group of experienced technical men will be in charge of the Parke, Davis exhibit, Booths 127, 128, 129 and 130.



Latest Information on Vitamins

The E. L. Patch Company of Boston, makers of Patch's Flavored Cod Liver Oil, will be on hand, in Booth 73, with the latest information concerning the ever-changing vitamin picture. Representatives of the Patch Company, direct from the laboratory in Boston, will be on hand ready to answer your questions, and the exhibit will contain unique and interesting features which will be well worth a visit.



To Discuss Radium

A full line of Radium instruments and accessories and of radium element instruments and accessories will be on display in Booth 121. Representatives of the Radium Company, Inc., and of the Radium Chemical Company, Inc., will be present and will be pleased to discuss radium therapy and radium therapy with visiting physicians.

Outstanding Sandoz Specialties

Sandoz Chemical Works, Inc., will feature Calgleon (Calcium Gluconate-Sandoz) in stable ampule solution for non-irritant and safe intravenous and intramuscular injection. The display will include Gynergen, the tartrate of ergotamine, a specific alkaloid of ergot for obstetric and gynecologic practice, and Scillaren, glucosidal principle of squill, a new reliable cardiodiuretic. Competent representatives will be in attendance at this instructive exhibit in Booth 51.

Complete Hay Fever Service

In Booth 118 Sharp & Dohme will exhibit their pharmaceutical products, especially Caprokol and Digitol; and their Mulford Biological products. Of particular interest will be their "Complete Hay Fever Service." This display will show several of the grasses which are causative factors of hay fever, and illuminated photographs of skin tests made upon patients with the pollens. Representatives will be happy to answer questions regarding any of the products and their uses.



Improved Squibb Products

A number of changes and improvements in several professional products will be featured in the exhibit of E. R. Squibb & Sons, and one or more new products will be introduced. Squibb Pollen Extracts, Arsenicals, Iodobismutol, Biologicals, Anesthetics, Glandular Products and Vitamin Products will be on display and competent attendants will be present at all times to

answer inquiries and discuss these products. Particular study has been given to making this display as informative as possible. Booths 143, 144 and 145.

To Show Synephrin



The non-toxic vasoconstrictor Synephrin Tartrate will be featured by Frederick Stearns and Company in Booth 17. Dosage forms suitable for the relief of nasal congestion accompanying hay fever, rhinitis, and sinusitis will be shown. Another integral part of this exhibit will be Insulin-Stearns and the popular service intended to simplify the instruction of diabetic patients. Physicians and chemists of the Stearns scientific staff will be in attendance.

Ulmer Laboratories to Feature Biliposol

Ulmer Laboratories will feature Biliposol, a new and distinctly different preparation for the treatment of syphilis, developed through many years of research by Dr. C. Levnditi of the Pasteur Institute, Paris, and his co-workers. It was Levaditi, the medical profession will recall, who in 1921 introduced bismuth therapy. You are invited to inspect this exhibit in Booth 158.

Winthrop-Metz Joint Exhibit

The Winthrop Chemical Company and the H. A. Metz Laboratories will exhibit jointly in Booth 45. A competent staff will discuss the latest developments of such well-established preparations as Luminal, Phandorin, Pyramidon, Novocain and Salyrgan. The Metz arsenicals, Neosalvarsan, Salvarsan and Silver-Salvarsan, will also be featured. Informative urograms obtained with Skiodan will be exhibited, and an interesting motion picture featuring Novocain Crystals in spinal anesthesia work will be shown.

Will Show Technic of Ampoule Medication

Featuring the various types of suppositories manufactured, John Wyeth & Brother, Incorporated, will exhibit their pharmaceutical products, showing manufacturing and testing processes and illustrating the technic of ampoule medication with colored anatomical transparencies. The new ampoule line and clean-break ampoules will be prominently displayed, and the double standardization of Wyeth Capsules Digitalis Leaf Defatted will be graphically demonstrated. Booth 74.

PHYSICAL THERAPY AND X-RAY

Utility of X-Ray Paper

Among the items shown by Geo. W. Brady & Co., in Booth 163, will be radiographs made on a new X-Ray Paper possessing all the qualities of X-Ray Films. The exhibit will be arranged to show the utility of x-ray paper and should prove very interesting to the visiting roentgenologists. On exhibit also will be a new all electric automatic dark room timer, new models of large and small flat top Bucky Diaphragms, and many other items of interest to the profession.

Exhibit of Radiographs

The exhibit of the Buck X-Ray Company, with a number of new and improved items, will be of particular interest to those of the medical profession who employ the X-ray. A showing of rare and interesting radiographs made on Buck Silver Brand X-Ray Film will be well worth seeing even though you may not use the x-ray in your daily practice. Booth 190.

Burdick Features New Units

The new developments in physical therapy equipment to be featured by The Burdick Corporation, Booths 179, 180 and 191, include the following: a new electro-surgical knife with new and exclusive features; a

new Zenlite infra-red lamp built for both general and local irradiation; a new, improved, low-priced quartz ultra-violet lamp. A special invitation is extended to physicians to visit the Burdick factory which is only an hour and a half's drive through beautiful country from Milwaukee.

New Respiratory Apparatus



Warren E. Collins, Inc., will demonstrate the latest respiration apparatus in Booth 210. Both adult and infant models of the Drinker Respirator with many improvements which increase the clinical value of the apparatus will be shown. The new Collins Oxygen Tent with its silent motor and large ice capacity, plus extreme simplicity of operation, will also be on display. The Benedict-Roth Metabolism Apparatus also has some improvements which will be of interest. Demonstrations will be cheerfully given.

X-Ray Film Demonstration

The latest Eastman-Kodak Special to the medical profession. The man Speed demo Kodak The v Radio trated valuable for head radiography, will also be on display. As usual, technical experts will be present to discuss any radiographic and photographic problems. An unusual feature of the Eastman exhibit will be the premiere presentation of the new Cine-Kodak Special to the medical profession.



Cold-Quartz U.V. Generators

The various models of the Cold-Quartz Ultraviolet Generators, manufactured by the Electro Therapy Products Corporation, Los Angeles, and now distributed from coast to coast, will be on display in Booth 189. Of particular interest to the physician are several definitely advantageous physical and mechanical features embodied in these advanced generators. One of the most striking is the fact that the heat radiation is very slight, permitting actual contact with human tissue without causing thermal burns.

COLD-QUARTZ

Advances in Electrotherapy

Several new and very interesting advances in the construction of electro-therapeutic equipment will be shown by H. G. Fischer & Co., Inc. Among them will be their model "H" diathermy and electrocoagulation unit which has a fixed spark gap and single dial control, greatly simplifying applications. The Fischer Model "SPD" (Super-Power Diathermy) for pyrotherapy has attracted wide attention. One of their most interesting exhibits will be their complete roentgenographic and fluoroscopic combination, including table and Bucky that, at a price within the reach of every physician, gives virtually every x-ray service required. Booth 69.

Fine Display of Electro-Medical Apparatus

The specialist, as well as the general practitioner, will see the latest developments in electro-medical apparatus and a fine display of medical radiographs by visiting the General Electric X-Ray Corporation's exhibit in Booths 172, 173, 174 and 175. Among these developments the medical visitor will find a new Deep Therapy Tube Stand and the newest addition to the famous series of "XP" self-protected Coolidge X-Ray Tubes—the XP7 Deep Therapy Tube. Also on display will be the new Hawley Fracture Table and the Sisk Urologic Table.



Emerson Respirator

Adult and infant models of the Emerson Respirator, accepted by the Council on Physical Therapy, will be shown in Booth 123. The mechanism for produc-

is a leather diaphragm, operated by hand, run noiseless, and has attachments for tilting, or administering oxygen while artificial respiration is being carried on. J. H. Emerson will also show simple, portable oxygen tents, and some research equipment including the Barcroft-Warburg Apparatus and the Emerson Micromanipulator.

Respiration Therapy

Various pieces of apparatus for treatment of respiratory conditions, whether respiratory embarrassment or asphyxia, will be displayed by the Foregger Co., Inc., in Booth 54. These will include the new Henderson Whooping Cough Tent, various oxygen inhalers and appliances, and Henderson, Flagg and McCormack Resuscitation Units. Also of interest will be the demonstration of the carbon dioxide absorption method used with the Metrie machine in anesthesia.

New Gevaert Radiographic Manual

The Gevaert Company of America, Inc., pioneer manufacturers of a wide line of world-famous photo sensitive materials, will occupy Booth 185 with a display of X-ray and photographic products. An assortment of radiographs exemplifying the results obtained with correct and incorrect technical procedure will be on display. Of special interest to the radiographer will be the new Gevaert Radiographic Manual

which will be ready for distribution very shortly and for which applications will be received during the meeting. A cordial invitation is extended to any physician to discuss problems confronting the users of X-ray in daily practice.

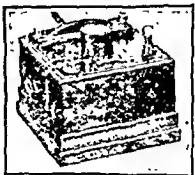
Oxygen Therapy Apparatus

Due to the rapid development of oxygen therapy, the exhibit of The Heidbrink Company in Booth 115 will be of particular significance. The firm has long specialized in gas inhalation apparatus, and in the exhibit this year the physician may see the newest developments in apparatus and tents for effective administration of oxygen.



New Electro-Medical Apparatus

The Lepel High Frequency Laboratories will exhibit in Booth 193 their new Short Wave Generator for energizing internal miniature ultraviolet quartz lamps for induction into urethra, bladder, kidney, transverse colon, stomach, trachea and bronchi, nose and ear. They will show a simplified machine for cutting under water and combination outfits giving diathermy and various forms of ultraviolet mercury quartz lights. There will also be on display a line of highly efficient inexpensive portable Diathermy Machines, Coagulators and Desiccators.



Diathermy Demonstrations

The exhibit of the Liebel-Flarsheim Company in Booth 102 will include the very latest developments in diathermy, ultra-violet and electro-surgical apparatus and accessories. Of especial interest to all surgeons will be the Universal Bovie Unit (illustrated), a complete equipment for all electro-surgical and medical diathermy applications. Working demonstrations and moving pictures of electro-surgical and medical diathermy techniques will be shown. Reprints and other technical data on latest electro-surgical techniques will be distributed without charge.



New X-Ray Equipment

Representatives in attendance at the Kelley-Roett Mfg. Co. exhibit, Booths 182 and 183, will be pleased to demonstrate the new

Keleket Manually Operated Tilting Table and the new Automatically Reset Vertical Cassette Changer. They will also show a representative line of accessory equipment, set up so that the observer may readily see every feature pertaining to each specific item.

For Oxygen Therapy

In Booth 2, The Linde Air Products Company will feature Linde Oxygen, U. S. P., for oxygen therapy. This is supplied in 110 cu. ft. and 220 cu. ft. industrial size cylinders, and is available in the neighborhood of every doctor and hospital. A new regulator for all oxygen therapy uses, the Linde Therapy Regulator—Oxygen-Type R-51, will also be shown. This regulator is built on the multistage principle which greatly adds to its accuracy, dependability and safety. Attendants conversant with oxygen therapy problems will be present.



Special McIntosh Features

In Booth 192, McIntosh Electrical Corporation will display their latest developments in physical therapy equipment and accessories, which will include



Infrared Generator, Doane's Tonsillar Coagulation Set, Doane's Adenoid Coagulation Set, and Remington's Cervical Coagulation Set. Be sure to see the O'Neill Klosscut Diathermy Cushions—positive assurance against diathermy burns.

New Resuscitator

McKesson Appliance Company will present a complete line of anesthetic, metabolism, and oxygen therapy equipment, as well as all types of suction and pressure pumps, in Booth 136. They will also introduce a new portable automatic resuscitating unit.

Carbon Arc Solarium Demonstration

The main feature of the National Carbon Company's exhibit, Booths 2 and 3, will consist of a demonstration of one of the latest types of Eveready Carbon Arc Solarium Units under actual operating conditions to show its advantages and usefulness to hospitals and sanatoria as a unit for group irradiation where ultraviolet light or artificial sunshine is required. This installation will be complete in every respect with special remote control equipment, thereby allowing all details of operation to be explained clearly. The new Eveready Professional Model Carbon Arc Lamp and Eveready Therapeutic Carbons will also be shown.



A Reasonably Priced Screen

The Patterson Screen Company will exhibit in Booth 184 two new screens—the Patterson Hi-Speed Combination of Intensifying Screens and the Patterson Par-Speed Combination. These are offered at new low prices and are made with the idea of giving the Roentgenologist the ultimate speed in the Hi-Speed Combination and a very reasonably priced speed screen in the Par-Speed Combination. Their complete line of fluoroscopic screens and fluoroscopic screen accessories will also be demonstrated.

Sterilizers and Therapeutic Lamps

The Prometheus Electric Corporation will present their latest developments in sterilizers, infra-red lamps and operating lights. Infra-red lamps are more efficient, more attractive and more reasonably priced than heretofore. Operating lights for office and hospital use will be shown. In sterilizers the firm will present something new in built-in cabinet outfits and offer a special trade in proposition for your old sterilizer. It will be well worth while investigating this exhibit. Booth 156.



MISCELLANEOUS

To Discuss Employment

Aznoc's National Physicians Exchange, exhibiting in Booth 70, will be represented by the Director, Mrs. Bates. She will be glad to explain the work of this medical personnel bureau which has served hospitals and physicians since 1896. Anyone desiring to employ a physician, nurse, dietitian, or laboratorian or any candidate wishing to secure a good position is invited to discuss with Mrs. Bates the advantages to be obtained by using the facilities of this exchange.



A Worth While Souvenir

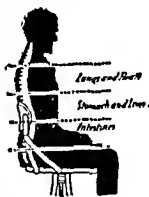
Physicians and their wives visiting Booth 138 of P. Beiersdorf and Company, Inc., will be presented with a jar or tube of Nivea Creme. Physicians and nurses like this different emollient cream for the care of their hands and will welcome this souvenir for their wash-up basin. To women, Nivea Creme appeals as an all-round, economic, cosmetic cream. Visiting physicians who will golf while in Milwaukee are requested to call for their tube of Nivea Creme—it's good for sun and wind-burn!

Camp Physiological Supports

At Booth 11, the S. H. Camp and Company will exhibit their latest physiological supports. New and latest shown in the company's ports excellently with them. Particularly interesting are the new supports for mammary glands. They sustain like an arm in a sling from the opposite shoulder, so the same principle of diagonal support is applied. Incorporated in them is the famous Camp patented adjustment.

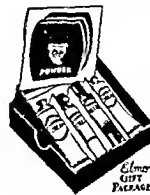
Do-More Health Chair

Booth 99 will offer you the opportunity of discussing with representatives of the Do-More Chair Company how their chair secures favorable posture results for the seated workers of office and factory employees, also for executives. An anatomical film will be in constant motion for your perusal.



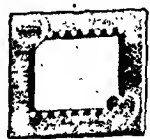
Gift Package of Elmo Toiletries

Every physician or physician's wife who registers at Booth 61 will be given a gift package of Elmo beauty preparations, illustrated here. Purity is paramount in the Elmo line, which includes Ra-Lo Lotion, Tissue Cream, Melting Cream, Skin Freshener, Cleansing Cream, Cucumber Cream, Tonic Astringent, and Ra-Lo Face Powder. Be sure to register for this attractive gift package containing samples of 5 Elmo preparations. If your wife does not attend the convention she will appreciate having one sent to her.



Improved Vanta Baby Garments

The Earnshaw Manufacturing Co. manufactures of Vanta baby garments without constantly making and will present the newest developments in Booth 82. An important feature is their sterilization of the layette sizes in these garments before packing, and sealing to keep them free from germs. The decision to autoclave these small baby garments was made after an extensive investigation showed this sterilization to be an important safety measure. A complete display of these safe-for-baby garments will be made.



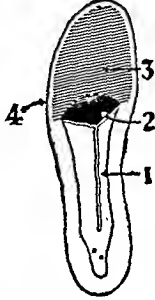
Educational Menstruation Literature

Two important and handy booklets on normal menstruation, "Health Facts of Men-

stration," and "Marjorie May's Twelfth Birthday," will be given free in any desired quantity by the Kotex Company at Booth No. 161. Both booklets are for distribution to patients. The first mentioned is an up-to-date treatise on menstruation for adults. It contains much authoritative material compiled by Dr. Lloyd Arnold, its author, using the facilities of the Kotex Company research department. The latter booklet is for the enlightenment of adolescent girls, and can be distributed direct or through parents.

Wright Arch Preserver Shoes

E. T. Wright and Company, Inc., will exhibit the Wright Arch Preserver Shoe for men, in Booth 155. Patented features of this shoe include support for the longitudinal arch of the foot, metatarsal support, flexibility where the foot bends, and a flat cross-wise insole. These features are built into the shoe and so anchored that they retain their contour throughout the entire life of the shoe. See this scientifically designed shoe which so many doctors not only wear but recommend to patients with foot troubles.



Inexpensive Medical Case History Method

If you find record-keeping an onerous task; if you are interested in a system that shows at a glance the case you want, how many calls you made and when, the patient's history, the developments, diagnosis and treatments, and the financial status of each case, it will pay you to spend some time in Booth 108 for the purpose of investigating the Medical Case History Bureau. All the charts are shown there as they are actually kept in their cabinets.

Sleep, Baby, Sleep!

Snuggle Rug Company, Booth 88, will display several of their various garments for keeping infants properly covered, featuring the Snuggle Bunny. This crib cover is designed to teach a child correct sleeping habits from infancy. It eliminates the possibility of thumb-sucking, and assures the mother that her baby is properly covered throughout the night, so that she need not make trips of inspection. Stop and see how this garment allows the child complete freedom of movement in any lying-down position, including stretching the arms above the head.



Simplex Flexies Health Shoes

The Simplex Shoe Manufacturing Company will have on display in Booth 135, a complete line of Simplex Flexies Health Shoes. This is one of the very popular lines of shoes for children. They are built on a special nature shaped health last which takes care of the heel, the base of the great toe, and the base of the little toe, thus forming a natural tripod and giving a firm support. They are glove smooth, and free from tack points, rough stitching and wrinkles. This exhibit will also include the Adrian X-ray Shoe Fitter.

The Trend of Malpractice Protection

Information on the increased activity in malpractice litigation, on the latest developments in malpractice protection, on the simple safeguards which every doctor should observe in his daily practice to keep out of trouble from malpractice charges, on the procedure the doctor should follow when he is threatened with a malpractice suit, will be available from the Medical Protective Company at Booth 131. Their representatives will be glad to discuss these questions with those interested. (Additional Exhibit items on advertising page 57)



List of Exhibitors

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Aloe Co., A. S., St. Louis	21 & 33
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Amer. Bakers Assn., Chicago	57
Amer. Hosp. Supply Corp., Chicago	152
Amer. Optical Co., Southbridge, Mass.	34
Amer. Scientific Co., Milford, Conn.	207
Appleton & Co., D., New York	195
Armour and Co., Chicago	137
Aznoe's Natl. Phys. Exchange, Chicago	70
Bard-Parker Co., Inc., New York	12
Battle Creek Food Co., Battle Creek, Mich.	71
Bauer & Black, Chicago	197
Baum Co., Inc., W. A., New York	104
Beeton Dickinson, Rutherford, N. J.	23-25
Reichsdrift & Co., P., Long Island City	138
Betz Co., Frank S., Hammond, Ind.	101
Bilhuber-Knoll Corp., Jersey City	35
Blakiston's Son & Co., Philadelphia	109
Borchardt Malt Extr. Co., Chicago	114
Brady & Co., Geo. W., Chicago	163
Buck X-Ograph Co., St. Louis	190
Burdick Corp., Milton, Wis.	179-181
Cambridge Instr. Co., New York	46
Cameron Surg. Spec. Co., Chicago	42
Camp & Co., S. H., Jackson, Mich.	11
Carnation Co., Milwaukee	41
Castle Co., Wilmot, Rochester, N. Y.	4
Chappel Bros., Inc., Rockford, Ill.	47
Chgo. Dietetic Supply House, Chicago	53
Chgo. Med. Book Co., Chicago	166
Church & Dwight Co., New York	38
Ciba Co., Inc., New York	154
Clapp, Inc., H. H., Rochester, N. Y.	28
Collins Inc., W. E., Boston	210
Committee on Foods	60
Comprex Osc. Corp., New York	160
Coop. Med. Adv. Bur.	126
Corn Prods. Ref. Co., New York	140
Curdolac Food Co., Waukesha, Wis.	29
Davies, Rose & Co., Boston	119
Davis Co., F. A., Philadelphia	142
Davis Co., R. B., Hoboken, N. J.	116
Davis & Geck, Inc., Brooklyn	196
DePuy Mfg. Co., Warsaw, Ind.	80
DeVilbiss Co., Toledo	103
Domore Chair Co., Elkhart, Ind.	99
Dry Milk Co., New York	68
DuPont Film Mfg. Corp., New York	204
Earnshaw Knitting Co., Newton, Mass.	82
Eastman Kodak Co., Rochester, N. Y.	194
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SATURDAY, MAY 13, 1933

MILK AND FOOD ALLERGY

Food allergy, or sensitivity to foods, has attained a recognized place in the list of disorders that may be associated with eating. There was a time when harm from food was supposed to be confined to infectious agents or toxic products. Now there is a gamut of menacing symptoms, including mainly vasomotor disturbances, skin eruptions, gastro-intestinal disorders and respiratory difficulties, which often find their explanation in the sensitization of the person involved to definite food ingredients. This susceptibility seems to be inherited in some instances and acquired in others. Infancy is not free from the menace of food allergy even during the period when milk forms the sole dietary intake. It is a matter of common experience, as Anderson, Schloss and Stuart¹ have recently pointed out, that eczema and other manifestations of hypersensitivity in the nursing baby are frequently aggravated by the addition of cow's milk, and conversely that eczema in the milk-sensitized infant is unrelieved by reverting to human milk or by the substitution of goat's milk.

Despite the earlier assumptions that antigenic proteins are specific for animal species, the experience of pediatricians suggests that there may be sufficient biologic similarity between the caseins of various milks to explain the failure of protection to sensitized children when the source of their milk supply is changed. Consequently, Anderson, Schloss and Stuart have undertaken tests of anaphylaxis with caseins prepared from human, cow's and goat's milk, respectively. Their experiments indicate a close immunologic relationship between these protein preparations. Apparently casein occupies a position analogous to lens and testicular proteins, in that it is not species specific but possesses characteristics that are common to a number of different species. Therein the investigators find a possible explanation of certain difficulties that are encountered in the treatment of allergic states by the substitution of one milk for another.

One reads that many milk-sensitive persons are unable to take raw or pasteurized cow's milk but can well tolerate boiled, evaporated or dried cow's milk. This is in harmony with the general assumption that denaturation by heat destroys the antigenic properties of proteins. There have been many experimental investigations of the problem. There are several proteins in milk, and their individual behavior toward denaturing procedures seems to vary. Cutler,² in 1929, concluded that there are no quantitative differences in the anaphylactic response to caseins derived from pasteurized and evaporated milk, but there was an alteration in the whey proteins during the process of heating. The quantity of soluble protein available from whey of evaporated milk was always less than half that obtained from raw or pasteurized milk. Furthermore, the heating involved in the preparation of evaporated milk altered the immunologic properties of the whey proteins so that the minimum lethal dose was larger than that of the whey proteins from either raw or pasteurized milk. There was a greater reactivity of heated whey proteins in animals sensitized with heated milk, but no differences were noted with the casein. Similar results were obtained by the precipitin and complement fixation tests.

The latest studies of Lewis and Hayden³ at the University of Chicago indicate that the isolated whey proteins from raw milk are extremely heat labile, since there is a decrease in antigenic reactivity even at 60 C., which becomes progressively more marked as the temperature is increased. Casein derived from raw milk is relatively heat stable, no change being noted in its antigenic reactivity until the temperature exceeds 100 C. Raw milk is relatively heat stable, since little change occurs in its antigenic activity until the temperature exceeds 110 C., probably because milk is composed chiefly of casein and because the casein protects to some extent the effect of heat on the whey proteins. In the midst of the allergy difficulties sometimes presented by milk, there is some satisfaction in the increasing reports of the substitute availability of so-called soy bean milk in infant feeding. According to the studies of Rittinger and Dembo⁴ of Cleveland, this "vegetable milk" compares favorably in many instances with the milk of animals from the standpoint of nutritional availability and biologic value. The Cleveland pediatricians observe that soy bean milk as a definite food for babies has not, in the past, received serious consideration in this country. In China, however, it has been demonstrated that this vegetable milk can be successfully employed as a food for growing infants. Economic stress and the relatively small consumption of dairy products in China are important factors in the promotion of the soy bean as a food substitute for cow's milk.

1. Anderson, A. F.; Schloss, O. M., and Stuart, H. C.: The Biologic Relationship Between Cow's, Goat's and Human Caseins, *Am. J. Dis. Child.* 44: 1178 (Dec.) 1932.

2. Cutler, O. I.: Antigenic Properties of Evaporated Milk, *J. A. M. A.* 92: 964 (March 23) 1929.

3. Lewis, J. H., and Hayden, H. C.: Effect of Heat on the Antigenic Properties of Milk, *Am. J. Dis. Child.* 44: 1211 (Dec.) 1932.

4. Rittinger, F. R., and Dembo, L. H.: Soy Bean (Vegetable) Milk in Infant Feeding, *Am. J. Dis. Child.* 44: 1221 (Dec.) 1932.

STUDY OF THE LATE EFFECTS OF MUSTARD GAS IN WARFARE

The casualties resulting from the use of mustard gas in the World War were nearly eight times as great as those from other types of chemicals used by the Germans. While "mustard gas" is not related chemically to the true mustard oils, the odor suggests mustard or garlic. It is dichlorodiethyl sulphide, which dissolves readily in gasoline, kerosene, alcohol and acetone, and these solvents may be used to remove it from clothing or from the surface of the body. "Mustard" is fifty times more toxic than chlorine and is lethal in concentrations varying from 0.006 to 0.2 mg. per liter, depending on the length of the exposure. Generally speaking, 0.07 mg. per liter is considered as the lethal concentration at an exposure of thirty minutes.

Major General Harry L. Gilchrist, chief of the Chemical Warfare Service of the U. S. Army, and Dr. Philip B. Matz of the Veterans' Administration¹ have made an experimental and clinical study of the late effects of warfare gases. The immediate clinical effects of mustard gas poisoning vary with the concentration of the gas, the length of exposure, the susceptibility of the patient and other conditions. The troops suffered little immediate discomfort from mustard gas, other than nasal irritation which caused sneezing. Usually within an hour or two, however, their eyes became inflamed, they vomited and the skin became erythematous and blistered. The first symptoms of poisoning may not appear for as long as twenty-four hours. In severe mustard gas poisoning there are symptoms of intoxication and ulceration of the respiratory system, with high fever. The lungs of those dying within forty-eight hours show a false membrane lining the bronchi and trachea, which forms a complete cast of these passages, often extending to the smallest bronchioles. The lungs of those dying after forty-eight hours show a necrotizing bronchopneumonia with abscesses. The small bronchi in these cases are obstructed with pus.

Gilchrist and Matz report on the late effects of mustard gas on eighty-nine living patients and in fifty-three fatal cases in which adequate histories on the sick-and-wounded cards were available. The eighty-nine living patients were examined clinically and roentgenologically; twenty-seven of them appeared to show definite anatomic or symptomatic effects of mustard gassing. The study of fifty-three deceased beneficiaries of the Veterans' Bureau showed that mustard gas was said to be the immediate cause of death in eleven cases; death was due to late results of mustard gassing in four cases. In the remaining thirty-eight cases, mustard gassing was not considered the cause of death. Among twenty-seven men gassed during the war, who still live,

twenty-one had chronic bronchitis at the time of this study, ten had emphysema, six had bronchial asthma, and two had pulmonary tuberculosis. In twenty-one of these cases the disabilities now considered as residual were first noted immediately after gassing, but in six cases the residual disabilities did not appear until from one to twenty-nine months later. Among thirty-eight men who had been gassed and who subsequently died of diseases not related to gassing, there were eight whose deaths were due to pulmonary tuberculosis, which could in no way be attributed to mustard gassing. One should not hold, therefore, a dogmatic opinion as to whether mustard gassing may or may not reactivate latent tuberculosis. Each case should be studied individually to determine whether such a relation exists. Mustard gas as used in the World War caused untold misery. While the mildest cases showed no systemic reaction, in the severe cases it burned the eyes and the skin, and plugged the bronchi with exudate; it produced an intense pallor, shock, and general collapse. Among those who recovered from its early effects are some who now, years later, have asthma, emphysema, chronic bronchitis, chronic conjunctivitis and corneal opacities.

THE EARLY DIAGNOSIS OF SMALLPOX BY COMPLEMENT FIXATION

Smallpox, an ancient scourge, is still a menace to mankind, largely because of fanatic refusal by certain sects to use vaccination and because of carelessness in the process of vaccination. According to *Public Health Reports*, in forty-four states there were 40,706 cases of smallpox in 1929, which had increased to 48,033 in 1930. While fortunately the disease has been mild, a number of outbreaks have occurred recently in large centers, where the danger of an epidemic presented a serious problem.

The prevention of contagion obviously depends on early isolation. Since physicians are apt to see few cases now, the clinical diagnosis may be missed or delayed. Recently a specific laboratory aid for the early diagnosis of smallpox was described by Parker and Muckenfuss¹ of Washington University School of Medicine. Briefly, they have adapted the technic of complement fixation with a specific serum for this purpose. They have found that material collected from the vesicles or pustules in sixteen cases of smallpox showed a positive complement fixation with specific serum in all but two instances, both of which were from lesions already twelve and fourteen days old, at a time when decrustation was almost complete. The positive tests in the other cases were found as early as the first day of eruption. In all of seven cases of vaccinia, the material collected from six to ten days after inoculation was positive, showing again the close serologic relationship existing between cowpox and smallpox. On the

1. Gilchrist, H. L., and Matz, P. B.: The Residual Effects of Warfare Gases: The Use of Mustard Gas, with Report of Cases, M. Bull. Veterans' Administration 9: 339 (April) 1933.

1. Parker, R. F., and Muckenfuss, R. S.: Proc. Soc. Exper. Biol. & Med. 29: 483 (Jan.) 1932.

other hand, control tests of pustular material from ten cases of chickenpox, impetigo and pemphigus were in each instance negative.

Since this method is thus specific and yields results obtainable as soon as the eruption occurs, it promises to enable physicians to pick out these sporadic cases of smallpox at the incipience of the rash and therefore early in their contagious period. Although other tests have been described, this one, as is true of complement fixation tests in general, has the important advantage of speed, so that in a laboratory set up for it a result may be obtained within a few hours. In this way the occasional case can be isolated quickly and prevented from contributing to the development of even a mild epidemic. Since it is probable that the existence of these neglected cases keeps the possibility of smallpox ever before us, early detection and isolation may succeed finally in removing all traces of this dread malady.

Current Comment

THE MILWAUKEE SESSION

As shown by the material published elsewhere in this issue, the Milwaukee session will be extraordinary in many ways. The conditions under which the meeting is held are ideal so far as concerns hotels, the auditorium, the exhibit space, and similar material arrangements. Next, the session is in a city closely adjacent to Chicago, where the Century of Progress will open on May 27. Thus, physicians from a distance will have an opportunity to attend both events and to give their families an opportunity to see the Century of Progress Exposition, if they wish, while the physician attends the sessions of the American Medical Association. The scientific program and the scientific exhibit indicate a high point in scientific quality seldom reached by medical gatherings. In view of the fact that the railroad rates offered are the lowest made in many years, there is reason to believe that in point of numbers also the Milwaukee session will set an unusual figure for medical meetings in the Midwest. Every physician should consider the opportunity to attend as a means of securing graduate instruction in concentrated form.

IODINE IN NUTRITION IN PARTS OF CHINA

The normal condition of the thyroid depends on a sufficiency of iodine in the diet. Since one function of the gland is to elaborate an iodine compound, such dependence is comprehensible. The minimum quantity of iodine required has been estimated to amount only to between 35 and 70 micrograms (millionths of a gram) a day, yet in many parts of the world diets may not contain even this minute trace. In such circumstances a large proportion of the children and young adolescents develop simple goiter, which may persist to adult years and subsequently develop into more serious pathologic thyroid states.¹ Year by year these

fundamental relationships are becoming further demonstrated, so that they afford a firmer basis for prophylaxis. Evidence now comes from the Yenching University in Peiping and relates to Coastal Mid-China. Adolph and Chen² had earlier shown, in harmony with what has been observed elsewhere, that the daily iodine intake was low in goiter areas in North China and that food and water supplies in these areas were deficient in iodine content. Now Adolph and Whang³ have made a study of the Shanghai-Soochow area, an East Mid-China area adjacent to the sea; the most commonly used marine foods have been analyzed for iodine content, and a variety of samples of common salt have been submitted to iodine analysis. The essential element is present in considerable amounts in vegetable foods in the Soochow-Shanghai area, being found in largest amount in cabbage. The marine foods of this district are all rich in iodine; laminaria outranks all other sea foods in iodine content, containing 0.024 per cent reckoned on the dry basis. In harmony with the fact that the region under investigation is recognized as nongoitrous, the average daily intake of iodine was found to be from 32 to 66 micrograms. The difference between the iodine intake of city and farm families was striking. The diet of the farmer, containing large amounts of green and root vegetables, insures a more adequate iodine intake. The city diet tends to replace these crude foods by delicacies containing less of the accessory factors. Incidentally, it may be noted that salt refining is still an innovation in China. The bulk of the salt consumed in the home is crude salt. This is helpful from the standpoint of thyroid normality.

HITLER'S PROGRAM AGAINST JEWISH PHYSICIANS

For some five weeks THE JOURNAL has received numerous communications from physicians, both American and German, protesting against the Hitler program so far as it concerns the suppression of Jewish physicians. The New York State Medical Society adopted a general resolution on the subject. The Philadelphia County Medical Society has recently adopted the following resolution, with a request that it be presented to the Board of Trustees of the Pennsylvania State Medical Society and also to the House of Delegates of the American Medical Association:

Resolved, By the Philadelphia County Medical Society: That this body of American physicians indignantly protests against the injustice visited upon members of the medical profession in Germany, who, because of their race or faith or descent, have been thrust out of their positions in dispensaries, hospitals and universities, and greatly hampered in their private practice. Among them are many whose contributions to medical science and art have been invaluable, and have brought great credit to Germany; but our protest is not because of the wrong done to the eminent only, it is for the humblest as well. The honor of our profession has been attacked, and we look to our colleagues in Germany, irrespective of birth or descent, to vindicate that honor by bringing about the abolition of a discrimination so repugnant to the spirit of science and of humanity. Be it further

Resolved, That these resolutions be forwarded to the Pennsylvania State Medical Society and from them to the Board of

2. Adolph, W. H., and Chen, S. S.: *Chinese J. Physiol.* 4: 437 (Nov.) 1930.

3. Adolph, W. H., and Whang, Pao-Chun: *Iodine in Nutrition in Coastal Mid-China, Chinese J. Physiol.* 6: 345 (Dec.) 1932.

1. Cameron, A. T.: *A Textbook of Biochemistry*, ed. 3, New York, Macmillan Company, 1931.

Trustees of the American Medical Association with their recommendation for adoption. Be it also further

Resolved, That a copy of these resolutions or others, when finally adopted by the American Medical Association, be sent to President Roosevelt, Secretary of State Hull, and Dr. Royal S. Copeland, United States Senator from New York, with a request that they be spread upon the *Congressional Record*.

Elsewhere in this issue (page 1550) appears a summary of some of the actions taken by the Hitler government as compiled from various German medical periodicals. When one considers what the Jewish physicians of Germany have accomplished for the advancement of medical science not only in Germany but throughout the world, one can only be amazed; one can only wonder how long such a situation can endure.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

May 16. Health for World's Fair Visitors.
May 18. Appendicitis.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

May 20. Middle Life.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Bill Passed.—A. 1321 has passed the assembly, proposing to penalize any person who by radio or any other broadcasting means asserts any fact, concerning the cure of any ailment by the use of any drug or therapeutic treatment, which is known by him to be untrue and is made with the intention of misleading.

Typhoid Carriers Discovered.—An investigation of the sixth case of typhoid fever to appear in a family since 1930 disclosed three typhoid carriers, according to the bulletin of the state department of health. The grandmother, who had typhoid when she was 17 years old, proved to be a carrier, as did two of her daughters, who were ill with typhoid in 1928 and 1930. Ten cases of the disease were traced in the family. The carriers have agreed to abide by the regulations of the health officer.

ILLINOIS

Bills Introduced.—S. 566 and S. 567 propose to create a board of examiners for practitioners of physiotherapy and to regulate that calling. Physiotherapy is defined as "the diagnosis and treatment of human ailments by the use of any natural force or agency, to wit, water, heat, sunlight, electricity or electrically produced energies, ultraviolet light, infra-red light, manipulation, massage, or other natural means without the use of medicine or operative surgery." Applicants for such licenses must be 21 years of age, of good moral character, have graduated from a high school approved by the department of registration and education and have studied physiotherapy for two years in schools of physiotherapy approved by the department. S. 572 proposes to repeal the act regulating the practice of beauty culture. H. 768 proposes to authorize the aseexualization of certain socially inadequate inmates of state institutions.

Chicago

Broadcasting Mental Hygiene.—Crime as a mental health problem will be discussed in a new series of radio talks, sponsored by the Illinois Society for Mental Hygiene over Station WGN, Chicago, beginning May 25. Dr. H. Douglas Singer, professor of psychiatry, University of Illinois College of Medicine, will treat this phase. Other speakers and their subjects in the series will be:

Clifford R. Shaw, Ph.D., research sociologist, Institute for Juvenile Research, Causative Factors in Delinquency, June 1.
Dr. David B. Rotman, Psychiatric Institute, Municipal Court, Mental Disease and Crime, June 8.
Dr. John A. Larson, assistant state criminologist of Illinois, Psychological Factors in Crime Detection, June 15.
Dr. Harry R. Hoffman, director, behavior clinic, criminal court, The Mentally Defective Delinquent, June 22.
Dr. Paul L. Schroeder, state criminologist of Illinois, Mental Health Measures in Prison Care, June 29.

The first series presented by the society will close, May 18, when Miss Marian McBee, psychiatric social worker, bureau of educational counsel, Winnetka Public Schools, will speak on "The School and the Child's Emotions." The theme of this series was "Emotional Problems of Childhood."

IOWA

Annual Renewal Fees Due Before June 1.—All licenses to practice medicine and surgery in Iowa expire annually on June 30. To renew such a license, a licensee must make a written application to the state department of health before June 1, enclosing the renewal fee of \$1. If a license expires by reason of the licensee's failure to renew it, it can be reinstated without reexamination only on the recommendation of the board of health and the payment of the overdue fees.

MICHIGAN

Bills Introduced.—H. 504 proposes to create a board of examiners of psychic and metaphysical healers and to regulate the practice of psychic or metaphysical healing. Psychic or metaphysical healing is defined as healing by any peripherally initiated impulse. H. 511 proposes to authorize the performance of autopsies on the bodies of convicts under certain circumstances. It proposes, too, to make it lawful for any licensed practitioner of medicine to perform an autopsy on a dead human body for the sole purpose of determining the cause of death, the study of disease or the advancement of science, provided consent in writing is obtained from the nearest available relative and, if a relative is not available and the next friend is available, that consent in writing be obtained from the next friend. H. 513, to amend the pharmacy practice act, proposes to permit any person now registered as an assistant pharmacist to take the examination for registration as a pharmacist. H. 531 to amend the pharmacy practice act proposes, in effect, to prohibit the sale of groceries or meats in pharmacies. It proposes, too, that all drugs dispensed by a pharmacy shall bear labels showing thereon the English name of the drug, the name, address and registry number of the registered pharmacist who compounded the drug, and the "dose to be administered to persons, three months, six months, one year, three years, five years, ten years, and twenty-one years of age."

MINNESOTA

Bills Enacted.—The following bills have become laws: S. 174, making the incurable insanity of either spouse a ground for divorce; S. 1260, providing that no person shall use, sell, transport or have in his possession any peyote or preparation of peyote; H. 884, granting to hospitals treating persons injured through the fault of other persons liens on all claims, judgments, awards, compromises or settlements accruing to the injured persons because of their injuries.

State Medical Meeting at Rochester, May 21-24.—The eightieth annual session of the Minnesota State Medical Association will be held in Rochester, May 21-24, under the presidency of Dr. Naboth O. Pearce, Minneapolis. Meeting headquarters will be at St. Mary's Hospital and hotel headquarters at the Kahler Hotel. The scientific program will be given mostly by resident physicians of the state. The following physicians will be included:

John H. Peck, Des Moines, Iowa, president, National Tuberculosis Association, Control of Tuberculosis: National and International.
Jay Arthur Myers, Minneapolis, Childhood Tuberculosis.
Walter C. Alvarez, Rochester, Complete Medical and Laboratory Examination of a Patient.
Frederick A. Willis and Harry L. Smith, Rochester, Adiposity of the Heart.
Frederick H. Scott, Minneapolis, Influence of Gravity on the Circulation.
Jennings C. Litzberg, Minneapolis, Modern Idea of the Etiology and Treatment of Abortions.

Thomas J. Kinsella, Victor K. Funk and Charlotte C. Van Winkle, Oak Terrace, Retrograde Intussusception of the Jejunum Through a Gastro-Enterostomy Stoma.

Philip C. Jeans, professor of pediatrics, State University of Iowa College of Medicine, Iowa City, Vitamin Deficiency in Children.
Russell J. Moe, Duluth, Therapy of the Artificial Menopause.
Waltman Walters, Rochester, Restoration and Conservation of Renal Function Following the Removal of Obstructing Lesions.
Edgar J. Huenekens, Minneapolis, Otitis Media in Children.
Tobias Birnberg, St. Paul, Fecal Incontinence and Megacolon.
Woodard L. Colby, St. Paul, Subacute Atrophy of the Liver.
Arthur S. Hamilton, Minneapolis, Spinal Fluid Examinations.
Henry W. Meyerding, Rochester, Fractures of Humerus with Volkmann's Contracture.

Monday evening, May 22, a medical economics meeting will be addressed, among others, by Drs. Morris Fishbein, editor, *THE JOURNAL*, Chicago, and Charles H. Mayo, Rochester, on "Trend of Medical Practice." Extensive demonstrations have been arranged and there will be symposiums on chronic suppurative otitis media, glaucoma, nutritional disorders and emergency surgery. Dr. James Ewing, professor of oncology, Cornell University School of Medicine, New York, will deliver the Citizens Aid Society Memorial Address, and Dr. Dean Lewis, Baltimore, President-elect of the American Medical Association, will speak. Archbishop John Gregory Murray of the diocese of St. Paul will give a talk on "The Medical Profession versus Racketeering." Dr. Lewis and Dr. Herman L. Kretschmer, Chicago, among others, will conduct clinics, on dislocations and urology, respectively.

MISSISSIPPI

Graduate Institute.—The East Mississippi Medical Society will sponsor a graduate medical institute at the Lamar Hotel in Meridian, June 6-9. The instruction will be given by Drs. Joseph Colt Bloodgood, clinical professor of surgery, Johns Hopkins University School of Medicine, Baltimore, and George Herrmann, professor of clinical medicine, University of Texas School of Medicine, Galveston. Following is the schedule for the session:

Tuesday, June 6:

Clinic by Dr. Herrmann, Endocrine Disturbances—General Medicine.
Lecture by Dr. Bloodgood, Breast Cancer.
Lecture by Dr. Herrmann, Modern Concepts of Heart Disease, Definition, Classification, Diagnosis and Criteria.
Special lecture by Dr. Bloodgood to local dental society, Cancer of the Jaw.

Wednesday, June 7:

Clinic by Dr. Bloodgood, Breast Cancer, Cases and Suspects.
Lecture by Dr. Herrmann, Disorders of the Heart Beat.
Lecture by Dr. Bloodgood, Prevention of Cancer of Mothers.

Thursday, June 8:

Clinic by Dr. Herrmann, Nephrosis and Nephritis.
Lecture by Dr. Bloodgood, Cancer of the Bones and Joints.
Lecture by Dr. Herrmann, Rheumatic Syphilis: Hypertension as Heart Disease, Coronary Sclerosis and Thrombosis.

Friday, June 9:

Clinic by Dr. Bloodgood, Cancer of the Bones and Joints.
Lecture by Dr. Herrmann, Treatment of Patients with Heart Disease With and Without Congestive Failure.
Lecture by Dr. Bloodgood, Education of Public and Profession of Medicine and Dentistry on Prevention and Cure of Cancer. This last will be a public lecture.

NEBRASKA

State Medical Meeting at Omaha.—The annual meeting of the Nebraska State Medical Association will be held in Omaha, May 23-25, with headquarters at the Hotel Fontenelle. Guest speakers and their subjects will be:

Dr. Henry L. Bockus, Philadelphia, Importance of the Irritable Colon in Everyday Practice.
Dr. Nathaniel G. Alcock, Iowa City, Iowa, Transurethral Prostatic Resection.
Dr. Charles A. Elliott, Chicago, Management of Hepatic Disease.
Dr. Leo A. Conway, Colorado Springs, Complications of Pulmonary Tuberculosis.

Three Omaha physicians, Drs. Howard B. Hunt, Anders P. Overgaard and James F. Kelly, will present a symposium on high voltage roentgen therapy. Among other Nebraska physicians listed in the tentative program are:

Dr. Sebastian J. Carnazzo, Omaha, Live Maggots in Treatment of Osteomyelitis.
Dr. James E. M. Thomson, Lincoln, Surgical Possibilities of the Deformed Arthritic.
Dr. George E. Neubaum, Omaha, Social and Economic Aspects of Traumatic Neurosis.
Dr. Alexander A. Conrad, Crete, The Country Doctor—His Status.
Dr. Arthur L. Miller, Kimball, Postoperative Morbidity and Mortality.
Dr. Albert F. Tyler, Omaha, Avertin Anesthesia in Electrosurgery.

Dr. Adolph Sachs, professor of medicine, Creighton University School of Medicine, Omaha, will be installed as president. The Nebraska Academy of Ophthalmology and Otolaryngology will hold its annual meeting, May 22, with Dr. Augustus G. Pohlman, dean, University of South Dakota School of Medicine, Vermilion, as guest speaker; he will discuss diagnosis and treatment of deafness.

NEW HAMPSHIRE

State Medical Meeting at Manchester.—The one hundred and forty-seventh annual meeting of the New Hampshire Medical Society will be held in Manchester, May 16-17, under the presidency of Dr. Harry O. Chesley, Dover. A special symposium on diseases of the biliary tract will be presented by Drs. Reginald Fitz, Boston, who will discuss the medical aspect; George W. Holmes, Boston, the roentgenologic aspect, and Alfred T. Bazin, Montreal, the surgical aspect. Dr. Frank H. Lahey, Boston, will give a general discussion. At the annual banquet, Wednesday evening, guest speakers will be Dr. Edward H. Cary, Dallas, Texas, President, American Medical Association, and Dr. Bazin. Dr. Cary will also address a general session. Other speakers at the general sessions will be:

Dr. Ezra A. Jones, Manchester, Orthopedics of Infantile Paralysis.
Dr. Paul de Nicola, Nashua, Diagnosis and Treatment of Multiple Sclerosis.
Dr. Chester L. Smart, Laconia, Malignancy of the Colon.
Dr. Philemon E. Truesdale, Fall River, Mass., Acute Pancreatitis Complicating Infections of the Bile Passages.
Dr. Adolphe J. Provost, Manchester, Latest Developments of the Tonsil Problem.

Dr. Truesdale will exhibit motion pictures Tuesday evening, May 16, on "Hernia of the Diaphragm," "Vaginal Hysterectomy for Prolapse" and "Thigh Amputation."

NEW MEXICO

State Medical Meeting at Roswell.—The fifty-first annual session of the New Mexico Medical Society will be held in Roswell, May 18-20, with headquarters at the Elks' Club. Among the guest speakers will be the following physicians:

Jesse Bedford Shelmire, Jr., Dallas, Texas, Etiology and Treatment of Eczema.
Ray M. Balyeat, Oklahoma City, Allergic Diseases, Diagnosis and Treatment.
Claude F. Dixon, Rochester, Minn., Carcinoma of the Rectum.
Clair L. Stealy, San Diego, Calif., Endocrinology and Its Value to the Clinician.
William Warner Watkins, Phoenix, Ariz., Natural History of Gastric Ulcer.
John T. Moore, Houston, Texas, Choice of Treatment of Fibroids of the Uterus.
Peter T. Bohan, Kansas City, Mo., Use of Drugs in Treatment of Heart Failure.
Francis C. Goodwin, El Paso, Texas, Open Reduction of Compound Fractures of Long Bones.
M. Reese Guttman, Chicago, Therapy of Malignant Tumors About the Head and Neck.
James W. Hendrick, Amarillo, Texas, Exophthalmic Goiter, Causation and Management.
Robert B. Homan, El Paso, Texas, Tuberculosis in Children.

The Chaves County Medical Society will entertain with a dinner dance at the Roswell Country Club Friday evening, a smoker Thursday evening and luncheons each day at the Nickson Hotel. The county society has also arranged a trip to Carlsbad Caverns for Sunday, May 21.

NEW YORK

Personal.—Dr. Georgia A. Filley, assistant physician at the Newark State School since 1926, retired in March. Dr. Filley had also served as assistant physician at the Skillman State Epileptic Village, Skillman, N. J., and Toledo State Hospital, Toledo, Ohio. For four years she was a medical missionary in China.

New York City

Society News.—The nineteenth Friday afternoon lecture of the New York Academy of Medicine was given by Dr. Douglas Quick, March 31, on "Care of the Cancer Patient," and the twentieth and last of the series, by Dr. Joseph C. Aub, April 7, on "Treatment of Malnutrition of Acute and Chronic Origin."—Dr. Israel S. Wechsler addressed the Bronx County Medical Society, April 19, on "The Neurologist's Approach to the Psychoneuroses."—Dr. Samuel Feldman, among others, addressed the Bronx Pathological Society, April 18, on "Histopathology of Various Forms of Tuberculosis."—Dr. Alfred F. Hess was recently elected president of the Harvey Society, and Dr. Edgar Stillman, secretary.—A symposium on preventive medicine was presented before the Medical Society of the County of New York, April 24, by Drs. Bernard Sachs, who spoke on "The Future of Preventive Medicine"; William H. Park, "Contribution of the Government to Preventive Medicine"; G. Canby Robinson, "Incorporation of Preventive Medicine into Private Practice" and Charles Ward G. Crampton, "The Periodic Health Examination."—Dr. Seth A. Brumfiel, Philadelphia, addressed the annual meeting of the American Stomatological Association, May 16, on medical economics.

NORTH CAROLINA

Society News.—Dr. Williams McKim Marriott, St. Louis, was guest speaker at a meeting of the Eighth District Medical Society, April 6, at High Point, on "Practical Application of Recent Studies of the Chemical Equilibrium of the Body."—Dr. William P. Herbert addressed the Buncombe County Medical Society, Asheville, April 3, on "Fixation, with Subsequent Compression of Pulmonary Lesions." Among other speakers at the annual meeting of the Fifth District Medical Society, April 13, at Red Springs, were Drs. Ivan M. Procter, Raleigh, on "Present Status of Cancer of the Uterus" and Addison G. Brenizer, Charlotte, on "The Thyroid Gland and the Evolution of Thyroidectomy."

OKLAHOMA

State Medical Meeting at Oklahoma City.—The forty-first annual session of the Oklahoma State Medical Association will be held in Oklahoma City, May 15-17, at the Skirvin Hotel. Guest speakers from other states will be:

Dr. Seale Harris, Birmingham, Ala., three addresses: Dietary Management of Peptic Ulcer, Hyperinsulinism and Management of Diabetes and Its Complications.
Dr. George W. Crile, Cleveland, Indications for and End-Results of Denervation of the Adrenal Glands.
Dr. Sumner L. S. Koch, Chicago, Injuries of the Nerves and Tendons of the Hand.
Dr. Herbert J. Rinkel, Kansas City, Mo., Clinical Allergy—Factors Governing Diagnostic and Clinical Procedures.

A general meeting open to the public will be held Tuesday evening, May 16, at which Dr. Tracey H. McCarley, McAlester, will give the presidential address. This meeting will be followed by the president's reception and dance. Three symposiums will be presented. Drs. George L. Driver, Ponca City, Leander A. Rieley, Oklahoma City, Homer A. Ruprecht, Tulsa, and Dr. Harris will discuss diabetes. Drs. Jolin L. Lehw, Jr., Guthrie, Ned R. Smith, Tulsa, Joseph W. Kelso, Oklahoma City, and Charles M. Fullenwider, Muskogee, will present papers on headache. Drs. James R. Reed, Theodore G. Wails, Minard F. Jacobs and Harry Wilkins, Oklahoma City, will give a symposium on vertigo. The annual golf tournament will be held Monday, May 15.

PENNSYLVANIA

Consultants to Health Department.—Mayor John S. Herron, Pittsburgh, has appointed fifteen physicians as an advisory committee to the Pittsburgh Department of Health. Members who have consented to serve are Drs. Raleigh R. Higgins, Otto C. Gaub, Thomas S. Arbutnot, Samuel R. Haythorn, Howard G. Schleiter, Paul Titus, Thomas McC. Mabon, Walter F. Donaldson, Edward J. McCague, Charles B. Schildecker, Milton Goldsmith, Russell R. Jones, Robert L. Anderson, Ernest W. Willetts and John R. Conover. The president of the Allegheny County Medical Society will also be a member ex officio. Dr. Thomas B. Carroll is the present president and Dr. George W. Grier will succeed him in June.

Philadelphia

Society News.—Dr. Simon Flexner, New York, addressed the Barton Cooke Hirst Obstetrical Society of the University of Pennsylvania at an open meeting, April 3, on "Virus Diseases in Man, Animals and Plants."—Dr. Byrl R. Kirklin, Rochester, Minn., addressed the Philadelphia Roentgen Ray Society, April 6, on "Cholecystographic Technique and Interpretation."—Dr. Irvine McQuarrie, Minneapolis, discussed "Water Metabolism in Health and Disease," at a meeting of the Philadelphia Pediatric Society, April 11.—Dr. Leonard G. Rowntree, among others, addressed the Pathological Society of Philadelphia, April 13, on "The Philadelphia Institute for Medical Research and Its Relation to the Interests of Pathology in Philadelphia."—Dr. Paul Dudley White, Boston, addressed the annual meeting of the Philadelphia Heart Association, April 25, on "Development of Our Knowledge of Heart Disease."—Dr. Karen Horney, Chicago, addressed the Philadelphia Club of Medical Women, recently, on "Psychogenic Factors in Female Functional Disorders."—The Society of the Medical Alumni of the University of Pennsylvania will hold its annual smoker, May 20.

WEST VIRGINIA

State Medical Meeting, May 22-24.—The sixty-sixth annual meeting of the West Virginia Medical Association will be held in Charleston, May 22-24, under the presidency of Dr. Delivan A. MacGregor, Wheeling. Guest speakers and their subjects will be:

Dr. Fred W. Rankin, Lexington, Ky., Surgery of the Upper Abdomen.
Dr. Horton R. Casparis, Nashville, Tenn., Tuberculosis in Children.
Dr. Pascal Brooke Hild, Philadelphia, Prevention of Maternal Mortality from Hemorrhage in Pregnancy and Labor.
Dr. Cyrus C. Sturgis, Ann Arbor, Mich., Treatment of Secondary Anemia.

Dr. Gordon F. McKim, Cincinnati, Clinical Review of 110 Cases of Renal Tuberculosis.
Dr. Jesse W. Downey, Jr., Baltimore, The Chronic Suppurative Ear.
Dr. Rosco G. Leland, Chicago, Recent Trends in Medical Economics.
Dr. Alvan L. Barach, New York, Therapeutic Use of Oxygen.
Dr. Ralph Pemberton, Philadelphia, Newer Outlook on Chronic Arthritis.
Henry F. Vaughan, Dr. P.H., Detroit, Medical Participation in Public Health Work.

The annual convention banquet will be held Wednesday evening, May 24, with J. Tandy Ellis, Ghent, Ky., as the speaker. Dr. James S. Klumpp, Huntington, will be toastmaster. Dr. James P. McMullen, Wellsburg, will deliver the oration in medicine and Dr. William S. Fulton, Wheeling, the oration in surgery. The annual golf tournament will be played at the Kanawha Country Club.

GENERAL

REGULATIONS CONCERNING THE
MEDICINAL USE OF LIQUOR

Regulations to govern the medicinal use of liquor under the National Prohibition Act, as amended by the act of March 31, 1933, have been promulgated by the Secretary of the Treasury and the Attorney General, to take effect on and after May 15, 1933. So much of those regulations as is of interest to physicians is printed below.

GENERAL PROVISIONS

SECTION 1. These regulations shall take effect and be in force on and after May 15, 1933.

SEC. 2. Such provisions of Regulations 2, Bureau of Industrial Alcohol, approved March 24, 1931, as relate to the manufacture of and traffic in intoxicating liquor for medicinal purposes, including Articles XVI and XVII thereof, shall be deemed to be a part of these regulations, except wherein such provisions are in direct conflict with these regulations.

KINDS OF LIQUOR THAT MAY BE PRESCRIBED

SEC. 3. Only spirituous and vinous liquor may be prescribed for medicinal purposes. The term "spirituous liquor" shall be construed to mean alcohol, whisky, brandy, rum, gin, and such like liquor produced by distillation. The term "vinous liquor" shall be construed as wine containing more than 3.2 per centum of alcohol by weight, including the fermented juice of the grape and of such berries as are commonly used in the production of wine.

(NOTE.—Vinous and malt liquors, and fruit juices, containing not exceeding 3.2 per centum of alcohol by weight do not come within the purview of the National Prohibition Act, as amended.)

SEC. 4. Prescriptions for any liquor other than spirituous and vinous liquor for medicinal purposes shall be void. The following preparations listed in the United States Pharmacopeia and National Formulary classed as fit for beverage purposes are held to be spirituous liquors and must be prescribed in the same manner and under the same conditions as spirituous liquors:

Elixir aromaticum (elixir aromatic)
Elixir anisi (elixir of anise).
Elixir aromaticum rubrum (red aromatic elixir).
Elixir aurantii amari (elixir of bitter orange).
Elixir cardamoni compositum (compound elixir of cardamon).
Elixir glycyrrhizae (elixir of licorice).
Elixir glycyrrhizae aromaticum (aromatic elixir of glycyrrhiza).
Elixir taraxaci compositum (compound elixir taraxacum).
Elixir terpin hydratis (elixir of terpin hydrate).
Spiritus aetheris (spirit of ether or Hoffmann's drops).
Spiritus myrciae compositus (compound spirits of myrcia).
Tinctura amara (bitter tincture).
Tinctura aromatica (aromatic tincture).
Tinctura aurantii dulcis (tincture of sweet orange peel).
Tinctura limonis corticis (tincture of lemon peel).
Tinctura zingiberis (tincture of ginger).

SEC. 5. Nothing in these regulations shall be construed as authorizing the prescribing by physicians of any liquor, or compounds thereof, including spirituous and vinous liquors, in any manner or in any quantity in any state or territory the laws of which prohibit such prescribing.

QUANTITIES OF LIQUOR THAT MAY BE PRESCRIBED

SEC. 6. A physician shall not prescribe for a patient at any one time a quantity of spirituous or vinous liquor in excess of what he in good faith believes is required to meet the medicinal needs of the patient as shown by the patient's condition at the time of prescribing.

SEC. 7. No prescription shall be issued for a quantity that in the judgment of the physician will last, when used as prescribed, more than thirty days; except that if a patient's medicinal needs will with reasonable certainty continue for a period longer than thirty days, a physician may prescribe for that patient at one time a quantity of spirituous or vinous

liquor sufficient to meet such needs, in which case the physician shall endorse on the prescription the word "special" and within twenty-four hours after its issue shall notify the Supervisor of Permits in writing of the issuance thereof, giving all the information required to be written on prescriptions by Section 11, without disclosing the nature of the patient's ailment. In no case shall a physician issue a prescription for a quantity of spirituous or vinous liquor in excess of that required to meet the medicinal needs of his patient for a period of ninety days.

SEC. 8. No person shall by any statement or representation that he knows is false, or could by reasonable diligence ascertain to be false, induce any physician to prescribe liquor for medicinal use (1) when there is no medicinal need for such liquor or (2) in excess of the amount of medicinal liquor needed.

ISSUANCE OF PRESCRIPTIONS

SEC. 9. Only a physician holding a permit to prescribe liquor may issue a prescription therefor. No physician shall prescribe liquor unless after a careful physical examination of the person for whose use such prescription is sought, or if such examination is found impracticable, then upon the best information obtainable, he in good faith believes that the use of spirituous or vinous liquor as a medicine by such person is necessary and will afford relief to him from some known ailment. It is suggested that in determining the quantity to be prescribed, the physician inquire of the patient concerning the quantity of liquor, if any, recently prescribed for the patient by other physicians.

THE FORM OF THE PRESCRIPTION BLANK AUTHORIZED FOR USE

SEC. 10. Until such time, not earlier than January 1, 1934, as the stamps mentioned in Section 2 of the Act of March 31, 1933, are printed and furnished to physicians, all duly qualified physicians holding permits and authorized to prescribe liquor will be furnished a sufficient number of prescription blanks, Form 1403, in serially numbered books of 100 original and 100 duplicate blanks each, to meet their requirements. These blanks may be procured free of cost by the physician from the Supervisor of Permits.

SEC. 11. The physician may issue prescriptions, as herein provided, using each blank in the book, those on which the word "Duplicate" is printed as well as those marked "Original," as an original prescription. This will enable the physician to write 200 original prescriptions from each such book of blanks. Attached stubs must be filled in by the physician at time the prescription is written. Such stubs shall be immediately forwarded by the physician to the Supervisor of Permits when the prescription blanks have been exhausted. The physician shall write on each prescription, including emergency prescriptions under Section 12, the kind of liquor prescribed, the quantity of liquor prescribed, the frequency of dose, the period of time for which prescribed, the full name of the patient, the date prescribed, the patient's address, the physician's signature and his permit number and address. The issuance in duplicate of prescriptions on Form 1403 shall be discontinued.

SEC. 12. In case of loss, theft or other condition necessitating the use of a blank form of prescription other than Form 1403, the physician may write an emergency prescription on an unofficial blank. When writing such a prescription, the physician shall endorse thereon the word "emergency," together with the other data required by these regulations. (See Sections 7 and 11.) Such emergency prescription must be written in duplicate, the duplicate being in lieu of the stub record of the prescription that would have been written on Form 1403. Such duplicate emergency prescription must be immediately forwarded by the physician to the Supervisor of Permits.

SEC. 13. Before completely exhausting the prescription Forms 1403 in the book on hand, the physician may apply to the Supervisor of Permits for a new book. The cover on the back of the prescription book must be detached and used in applying for a new book of Form 1403 prescription blanks.

SEC. 14. All printed instructions and notices appearing on the cover of the prescription book and on the reverse sides of all prescription blanks, Form 1403, may be ignored wherever in conflict with these regulations.

RECORDS TO BE KEPT BY THE PHYSICIAN

SEC. 15. A record shall be kept by every physician who issues a prescription for spirituous or vinous liquor, in a bound book alphabetically arranged according to surnames of patients, showing the date of issue, the amount of spirituous or vinous liquor prescribed, to whom prescribed, the period for which prescribed, the purpose or ailment for which it is to be used, and directions for use, stating the amount and frequency of

the dose. The record book herein required to be kept shall be procured by the physician through commercial channels, and will not be printed or furnished by the Government.

SEC. 16. No physician shall be called upon to file any statement of the ailment for which spirituous or vinous liquor is prescribed, in the Department of Justice or Department of the Treasury, or any other office of the Government, or to keep his records in such a way as to lead to the disclosure of any such ailment except when lawfully required in the following manner: Where disclosure of the ailment may be required in any court of equity reviewing the action of the Commissioner or the Supervisor of Permits, of the Bureau of Industrial Alcohol, in the revocation of a physician's permit; or where disclosure as to the ailment of the patient is required by any duly qualified person engaged in the execution or enforcement of the National Prohibition Act, or any Act supplementary thereto; but no such person shall require the physician to disclose the ailment except where he shall first obtain written specific authorization so to do from his superior officer.

PRESCRIPTIONS, BY WHOM FILLED; CANCELING, FILING, AND REPORTS

SEC. 17. A pharmacist employed by any person other than a retail druggist may not fill a prescription for spirituous or vinous liquor. A prescription for spirituous or vinous liquor written in accordance with these regulations may not be filled after midnight of the seventh day following the date of its issuance. A pharmacist filling a prescription for spirituous or vinous liquor shall at the time endorse upon said prescription over his own signature in ink or indelible pencil the word "Canceled" together with the date when the liquor is delivered. The canceled prescriptions must be kept in a separate file as a permanent record available for inspection by properly qualified officers of the Bureau of Industrial Alcohol, or the Bureau of Prohibition at any reasonable hour. No such prescription shall be refilled.

SEC. 18. A retail druggist, holding a permit authorizing the sale and dispensing of spirituous or vinous liquor on physicians' prescriptions through a pharmacist named in his permit is required to prepare each month a report, in duplicate, on Form 1421, giving all the information called for on such form, and in addition thereto, he must indicate on line 21 of the report form the total number of all prescriptions filled for spirituous and vinous liquor; and, in addition as item 21a, only the number of prescriptions which he has filled for spirituous liquor in excess of one quart and the number of prescriptions which he has filled for vinous liquor in excess of one gallon. He shall forward one copy of this report to the Supervisor of Permits on or before the tenth day of the month succeeding the month for which the report is prepared, and shall retain the other copy as a permanent record.

SEC. 19. In addition to the report required in Section 18, the druggist shall notify in writing the Supervisor of Permits within twenty-four hours of the filling of each prescription which calls for a quantity in excess of that prescribed for a period of more than thirty days, stating the name and address of the patient, the name and permit number of the physician, the kind and quantity prescribed, the period of time for which prescribed, and the name, address, and permit number of the retail druggist.

SEC. 20. Liquor lawfully obtained on prescription and properly labeled may be possessed and transported by the person for whom prescribed, by another member of the patient's household (including a nurse or servant) for administering to the patient, by the druggist filling the prescription or his regular employee, or by the physician who wrote the prescription.

FOREIGN

New Regulation of German Medical Practice.—News items appearing in the issues of the *Münchener medizinische Wochenschrift* and the *Deutsche medizinische Wochenschrift* for the weeks of April 7 to April 21, inclusive, indicate the following actions in Germany against Jewish and other foreign physicians:

An ordinance of the Prussian Ministry of the Interior of March 29 states that foreigners, even those who received their preliminary education in Germany, can no longer count on receiving licenses to practice in Germany.

Control of the five largest associations in charge of sickness insurance has been placed under the federal ministry of labor.

Dr. Gerhard Wagner, Munich, first chairman of the National Socialist German Physicians' Organization, has been nominated Commissioner of the National Physicians' Organizations, of the Association of German Physicians and of the German Alliance of Physicians' Societies.

The Supreme German Medical Societies (Die deutschen ärztlichen Spitzenverbände) gave out the following ordinance in accordance with their commissar, Dr. Gerhard Wagner (first chairman of the National Socialist Physicians' Union):

In execution of their resolution to adhere to the spirit and form of the medical societies of the new order, the directors of the Aerztevereinsbund and the Hartmannbund ask their members, with the advancement of German medicine in mind, to take pains immediately to dismiss from committees and boards of directors all Jewish members; all colleagues who cannot conscientiously adhere to the new order must be replaced.

Through the directors of the sickness insurance societies it is to be impressed in turn on the directors of the sickness insurance companies and insurance organizations, officials and superintendents to replace immediately Jewish and Marxist confidential consultants. DR. STAUDER.

I decree that the foregoing regulation be immediately enforced and notification thereof sent me. DR. WAGNER.

Dr. Frank, surgeon and member of the board of health, director of the hospital at Fürth, was taken in protective arrest. He was replaced by the internist Professor Weigelt. Dr. Sponheimer, superintendent surgeon, was granted leave of absence.

The Universities of Leipzig and Bavaria have decreed that no member of the Jewish race will be permitted to matriculate in medicine for the next ten semesters. Enrolment of students for the study of medicine at the University of Munich is to be cut down to 345, at Würzburg to 130, and at Erlangen to 98. Under the terms of these regulations, any one who had one parent or one grandparent of Jewish race is considered Jewish.

The annual session of the German Society for Internal Medicine was scheduled to meet this spring under the presidency of Professor Lichtwitz of Berlin. He resigned from his office and was replaced by Prof. A. Schittenhelm of Kiel. At the forty-fifth Congress of Internal Medicine in Wiesbaden, Dr. Schittenhelm, successor to Dr. Lichtwitz, stated that differentiation must be made between old settled German-Jewish families of high culture and recently arrived eastern Jewish elements, since it is only the latter who bring about a racial taint by intermarriage with Germans. "Men like Ehrlich, Neisser, Minkowski and Wassermann," he said, "should be given great respect by German physicians and people of their talent would in the future undoubtedly be able to succeed in Germany."

In Baden, all Jewish physicians have been dismissed from the public health service and from the sickness insurance organization. In the hospitals they are permitted to treat only Jewish patients and to perform postmortem examinations only on Jewish patients who have died. A similar regulation has been established in Munich.

In Munich, S. Obendorfer and O. Neubauer requested a leave of absence from the Schwabing Hospital. The following Jewish physicians of the main office of public health in Berlin were given leave of absence: Professor Seligmann, Drs. Borinski, Cohn, Wolff, Nussbaum and others. The Jewish physician-in-chief of the cripple welfare station VII in Charlottenburg, Dr. Böhm, was replaced by Dr. Kniekamp of the orthopedic clinic.

The business director of the Berlin ambulatory clinic, Max Edel, and Dr. Friedberger, were placed under protective arrest.

The editor of the *Deutsches Ärzteblatt*, San-Rat. Vollman, was given a leave of absence by the chairman of the Deutscher Aerztevereinsbund. Dr. K. Walder of Potsdam takes his place.

The Committee on Therapeutics of the German National Society of Physicians has made public a list of pharmaceutical preparations manufactured by concerns under Jewish ownership or control with the request that physicians in general do not prescribe such preparations.

MEETING OF GERMAN NATIONAL-SOCIALIST (NAZI) PHYSICIANS' ORGANIZATIONS

The business committee of the Deutscher Ärztevereinsbund met with the entire directorate of the Hartmannbund and the directors of the "National-socialistischer Deutscher Aerztebund," in its new organization, April 2, in Leipzig.

The meeting was opened with a long speech by Geheimrat Stauder, who brought out that the core of the agreement of Nuremberg was the thesis of "confident cooperation," to which all participants had agreed. If they had not gathered together, the new conditions would have marched right over the physicians' organizations.

"As the Fatherland stands above the interests of the medical profession," he said, "one cannot in this time of change concern oneself with trivial demands, particularly with economic wishes. They have agreed, as a first joint decision, to send a summons to the medical organizations to induce Jewish colleagues and those who could not join the new régime from inner conviction to relinquish their positions in directorates and committees. Further, the 'Reichsarbeitsministerium' had been presented with the urgent request of the 'National-socialistische Deutsche Ärzteschaft' to eliminate the Jewish and Marxist consulting physicians. The most recent developments have shown how unavoidable these measures are.

If in these times the leaders of medicine have been severely criticized from a political standpoint, this has surely been in ignorance of the great difficulties in which directors of the Supreme Physicians' Organizations (ärztliche Spitzenverbände), who have surely never lacked the intention of acting in the German spirit, have been. The aim of the Supreme Physicians' Organizations is to create a united organization."

Stauder's speech was followed by an address by Dr. Wagner of Munich, commissioner of the Supreme Physicians' Organizations, who thanked the directorate of the organizations for the fact that it had been possible for the national socialistic physicians to reach an agreement as colleagues so that the solidarity and unity of the medical profession had not had to be surrendered.

Wagner then developed along general lines the plan for the reorganization; for instance, the new appointment of the state board for physicians and sickness insurance funds (krankenkassen), laying down of rules for admission as contract physician for the sickness insurance funds (kassenarzt), renewal of the contract physician's privilege.

"Through a state physicians' regulation," he said, "a unified organization of the medical profession must be created. The population policy is an important question whose solution constitutes one of the major aims of the German National Socialist Physicians' Organization. Health commissioners have already been appointed in all the larger states. The universities, which must devote themselves to the education of German youth very differently than heretofore, will not be excluded from these plans. Further, the appointment of a state secretary or minister of public health is being considered. The spirit that must dominate the medical profession, in view of this great reorganization and to accomplish the many tasks, cannot concern itself predominantly with the degradation of fee regulations."

The medical youth was then represented in a speech by Dr. Gross, who, in reemphasizing the words of Wagner, warned not to let the large upswing of the national elevation be lost and choked in a maze of clauses. In conclusion Dr. Conti (of the Prussian ministry of the interior) reported the result of his investigations of the Chief Organization of German Sickness Insurance Funds, which gave a devastating picture of mismanagement.

The assembly refrained from a discussion and agreed unanimously to the decision, which is again repeated verbatim: "Dr. Gerhard Wagner, Munich, 1. Chairman of the National and Socialist German Physicians' Organization, is to be commissioner of both Supreme Organizations. The directors and the business managers remain in office and continue their work in confidential cooperation with Dr. Wagner."

CORRECTION

Lederle Solution Liver Extract Parenteral Refined and Concentrated (See New and Nonofficial Remedies, 1933, p. 258).—The definition of potency of this product now reads: "Each 3 cc. is equivalent to the antianemic potency of approximately 65 Gm. of whole liver." This should read: "Each 3 cc. is equivalent to the antianemic potency of approximately 100 Gm. of whole liver." The potency statement at the end of the description should read: "The solution is subsequently passed through a Berkefeld filter and, after regular sterility tests, is filled into vials, each cubic centimeter of liquid having an antianemic potency equivalent to that of 33.3 Gm. of liver."

Government Services

New Public Health Officers

The following physicians have been appointed and commissioned as assistant surgeons in the regular corps of the public health service: Oliver C. Williams, Don S. Caneron, Calvin Benjamin Spencer, Bert R. Boone, Cassius J. Van Slyke and Edward C. Latton, in the reserve corps.

Change of Station in the Navy

Lieut. James C. Drybred, from naval hospital, New York, to Asiatic Station.
Lieut. Harold J. Cokely, from Norfolk Navy Hospital, Portsmouth, Va., to Asiatic Station.
Lieut. Julius C. Early, Jr., from navy yard, Norfolk, Va., to U. S. S. *Chamont*.
Lieut. Kenneth H. Vinnedge, from U. S. S. *Oglala* to naval hospital, Pearl Harbor, T. H.
Lieut. Leon H. Warren, from naval hospital, League Island, Philadelphia, to Asiatic Station.
Capt. Abraham H. Allen from the hospital corps school, Norfolk Naval Hospital, Portsmouth, Va. to the Asiatic Station.
Lieut. Clifton A. Young from Norfolk to the first brigade, U. S. Marines, Port au Prince, Haiti.
Lieut. John M. Brewster from Garde d'Haiti, Port au Prince, Haiti, to the naval hospital, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 15, 1933.

Occupations for the Tuberculous

It is now recognized that the problem of tuberculosis involves more than the treatment—that the occupation to be followed on recovery presents a difficulty. The pioneer work of Sir Pen-drill Varrier Jones in founding the village settlement for the tuberculous at Papworth provides one solution. Although his example has been followed elsewhere, the percentage of cases that can be thus dealt with remains small. The Central Fund for the Industrial Welfare of Tuberculous Persons provides work in especially good surroundings for tuberculous persons living in their own homes. In 1923 it opened the Spero Leather Workshop in London and it has now provided new premises, which were formally opened by Sir Henry Betterton, the minister of labor. The government showed its appreciation of the project by making a grant toward the expenses. General Sir W. Braithwaite, chairman of the executive committee, said that 50 per cent of tuberculous people returned to their previous occupation or to the competitive market. It was difficult for the ex-tuberculous patients to find work in the ordinary labor market, and the Central Fund devoted its efforts to finding employment for them. They worked a shorter week than was customary in the particular trade, but were provided with employment all the year round.

Jonathan Hutchinson is Dead

The death of Mr. Jonathan Hutchinson, consulting surgeon to the London Hospital, recalls the association of that name, in the person of his father, with one of the world's great clinicians. Born in 1859, he entered the London Hospital medical school in 1876 and after a distinguished career became F.R.C.S. in 1884. He filled, at the hospital in succession, the posts of demonstrator of anatomy, surgical registrar, assistant surgeon and surgeon. He showed a versatility like that of his father in also becoming ophthalmic surgeon to the Great Northern Hospital and surgeon to the Lock Hospital. In 1888 he gained the Jacksonian prize of the Royal College of Surgeons for an essay on Injuries to the Epiphyses of the Long Bones and in 1914 he repeated this feat with an essay on Trigeminal Neuralgia. In the long history of the Jacksonian prize, the gaining of it twice had been accomplished by only three predecessors. In 1892 he delivered the Erasmus Wilson lecture on Syphilitic Affections of Bones, Joints and the Lymphatic System. He was a good clinical teacher and a dexterous operator, best known for performing the delicate operation of excision of the gasserian ganglion. All his work was of the highest quality and no doubt he would have attained greater prominence had he not been overshadowed by the dominant position of his father. Both showed the industry, sobriety and aversion to any kind of show so characteristic of the Quaker stock, as well as the scientific ability in which this sect has been so prolific.

The International Control of Narcotics

The international convention for the limitation of manufacture and the regulation of the distribution of narcotic drugs of July 13, 1931, has received twenty-eight ratifications or accessions. It will therefore come into force in ninety days. Besides the European great powers and the United States, countries that have come in are Belgium, Brazil, Bulgaria, Canada, Chile, Costa Rica, Cuba, Dominica, Egypt, India, Lithuania, Mexico, Monaco, Nicaragua, Persia, Peru, Portugal, Spain, Sudan, Sweden, Switzerland, Turkey and Uruguay. Notification that the instruments of ratification will be deposited have come from Czechoslovakia, Hungary, Poland and Rumania.

Under the system established by the convention of 1931 there will exist at Geneva a central office, which will keep strict account of the world's traffic in dangerous drugs so as to limit their manufacture to the quantities necessary for medical and scientific purposes. Estimates of these will be drawn up every year and the limits within which any country may import drugs will be fixed. Henceforth a state will not be able to produce drugs or import or export them except under the control of an international supervisory body. It is hoped that the drugs available for illicit traffic will thus disappear in time.

Distinguishing Between Chloroform and Ether

As the mistake of confusing chloroform with ether has been made, the question of safeguards has been discussed in the *British Medical Journal*. One correspondent suggests that a distinctive dye should be added to chloroform. Messrs. Duncan and Flockhart, the manufacturers of chloroform, state that in about 1908 they made experiments at the wish of some anesthetists. They were successful in producing red chloroform that was stable and free from anything objectionable. But the demand for it was comparatively small and gradually diminished.

As there might be difficulty in relying on the purity of colored chloroform, L. F. G. Simmons and C. G. A. Sadler, of the National Physical Laboratory have had made some glass density balls of a size to drop into the bottles used to contain anesthetics. These balls are easily made of such a density that they float in chloroform and sink in ether. Further, being blown from capillary tubing, they have a projection where they are sealed off. When put in the usual mixture of two parts of chloroform to three of ether, they float below the surface with the projection downward, whereas in chloroform they float on the surface with the projection almost level. Thus, if the anesthetist has one of these balls in each of the bottles in his bag or on the anesthetic table he can tell at a glance what the bottle contains, even should some one pour chloroform into a bottle already containing ether. These balls are to be put on the market.

Osteopaths Again Attempt to Obtain Registration

The failure of previous attempts of the osteopaths to obtain legal recognition has been described. They are now making a further attempt. In the house of commons a private member asked leave to introduce a bill on the registration and regulation of osteopaths. The bill proposes to set up a statutory board to compile a register of qualified osteopaths and to supervise the admission to that register of persons who have followed a prescribed course of study and acquired a prescribed standard of professional competence. The member said that under the bill "an incompetent and unqualified charlatan and quack would be debarred from practicing osteopathy." It was added that osteopaths did not seek inclusion in the general medical profession; all they asked was recognition by the legislature to regulate their own affairs with a view to protecting the public. Leave to introduce the bill was granted. Probably the result will be the same as in previous attempts. The government will say that it cannot recognize two different kinds of medical practitioners and that it is open to osteopaths by going through the ordinary medical course to obtain registration and then practice osteopathy.

A Fall of Four Miles Would Not Produce Unconsciousness

Mr. Trantum, the parachute jumper, has made an experiment in London which shows that falling through the air for 4 miles does not produce unconsciousness. He is preparing to break the world's record for a free fall before opening his parachute. Equipped with an oxygen apparatus, he entered a low-pressure chamber and observation was kept on him through a small glass window. The pressure was reduced until it was equiva-

lent to that of an altitude of 24,000 feet. Then he gave a signal that he was ready for the "drop," and the pressure was increased at the same rate as it would increase when a man falls without a parachute from 24,000 feet to the ground. Mr. Tranum emerged from the test without feeling any ill effects.

PARIS

(From Our Regular Correspondent)

March 29, 1933.

Uremia Following Gastric Operations

In an article in the *Presse médicale*, Mr. Robineau discusses the causes of death following operations on the stomach. He considers that drainage is unnecessary after an operation well performed, and in its stead, in case of perforation or of suture causing any anxiety, he prefers a rubber sheet with gauze wicks. He takes up the subject of death a few days after operation in the face of reassuring postoperative conditions. The patient, who appears to be recovering rapidly, presents, between the third and fifth day, disquieting symptoms: constipation or diarrhea; distention; dyspnea that suggests pulmonary infection, and, particularly, oliguria. Death intervenes within a few days, after a period of restlessness, delirium and coma. At necropsy, one discovers no signs of infection. The main cause of death is uremia. Postoperative uremia is well known in urinary surgery; but it is not so well known in gastric surgery. Fortunately it is usually transitory and disappears before the surgeon has suspected its existence. Repeated analyses of the blood made in all patients operated on by Max Levy showed that the urea increased rapidly immediately after the operation and finally exceeded 1 Gm., or even 1.5 Gm., without any outward signs. This azotemia coincides with oliguria and disappears as soon as secretion of urine becomes normal. These things occur irrespective of the anesthetic employed. But what may be more important is that the percentage of chlorides in the blood is lowered not only within the corpuscles but also in the serum, and, naturally, in the urine. If injections of hypertonic solutions of sodium chloride are made, the percentage of chlorides in the blood and in the urine is not raised immediately, for the cellular tissue continues to store a portion of the chlorides. It is difficult to explain why this retention of chlorides, unaccompanied by edema, is concomitant with uremia. When, later, the injections of the hypertonic solution of sodium chloride begin to improve the situation, the percentage of chlorides in the blood and the urine is restored and the uremia disappears. Mr. Robineau approved the practice of surgeons who, thirty years ago, prescribed hypodermic or intrarectal injections of physiologic solution of sodium chloride for all persons who had been operated on. They believed that thereby the blood pressure was raised. In reality, they applied, without knowing it, the best preventive treatment for postoperative uremia. Mr. Robineau thinks it would be better to restore that custom and to abandon the serum with dextrose that has been substituted for it but that does not fulfil the same purpose. He has introduced this plan with patients who have had gastric operations, and since that time the deaths from uremia have diminished greatly.

Cancer in Indo-China

It has been assumed that cancer is rarely observed among the natives of French Indo-China. Many fantastic theories have been based on this belief, with respect to the etiology of cancer outside of the white race. Dr. Le Roy des Barres, who for thirty years has been chief surgeon at the Hanoi Hospital in Tonkin, announced recently to the Academy of Medicine that, since medical statistics have been collected in that country, it is apparent that cancer is just as frequent there as in Europe. Those who hold that cancer is of microbic origin would have to assume that the offending microbe or parasite is evenly distributed throughout all lands, and that is hardly borne out

by what is known about the geographic distribution of parasites in general. Mr. Le Roy des Barres stated that there had been a steady increase in the number of cases of cancer treated. The proportion of connective tissue tumors with relation to epitheliomas is much greater than in Europe. The most frequent cancers found are cancer of the penis, whereas cancer of the uterus or of the breast is less frequent than in Europe. Cancers of the digestive tract number only 5 per cent, as against 50 per cent in Europe. The average age of persons affected with cancer, 36, is much lower than in Europe. At Hanoi a cancer treatment center has been established. The cancer department is attached, on the one hand, to the surgical clinic of the Hanoi School of Medicine, and, on the other hand, to the Radium Institute. The patient has the same opportunities of receiving suitable treatment that he would have in European or American hospitals.

The Effects of the Economic Crisis on Mental Disease

In an article in *Temps*, Dr. Logre discusses the effect of the economic crisis on the development of mental disease. Contrary to the general opinion, he states that the influence of the crisis has been more in the direction of modifying the type of ordinary psychoses than in increasing the number of mental patients. The increase is only apparent, for the crisis has produced psychoses only in persons who were already unstable. The cases of insanity provoked solely by financial worries, in persons previously of sound mind, have been rare. The same was true during the war, for insanity developed only in persons previously psychopathic. The crisis has, however, had an influence in giving rise to new kinds of obsessions among psychopaths suffering from delusions of persecution. The most common forms are those observed among the poor who fear being evicted from their dwellings by their landlord for nonpayment of rent; those who are pursued by tax collectors for nonpayment of taxes, or those who fear losing their positions in case their employer should fail and be obliged to close his office. The admissions to the psychopathic hospital have been more numerous and include many patients belonging to the foregoing categories. One observes also many patients suffering from a fear complex, persuaded falsely of their approaching ruin; likewise, many suffering from melancholia. To these may be added many addicted to the use of narcotics, particularly barbitol and related substances. There has likewise been some development of alcoholism among the unemployed, who seem to prefer to spend their meager funds for drink rather than for food. The number of suicides in Paris has doubled within the past five years. Many of these suicides have occurred among persons formerly in possession of wealth.

Lectures at the American Hospital in Paris

The American Hospital at Neuilly, just outside of Paris, is becoming not only a model institution but also an occasional center of instruction for which the practitioners of Paris display considerable interest. A medical meeting was held there recently at which Dr. Le Mée delivered an address on "Medico-surgical Cinematographic Instruction in France and in the United States," for which he used the material that he had brought from America. Four other papers were presented by eminent French scientists, one by Mr. Benoît Levy, who is carrying on a campaign in France in favor of educational films; a second on bronchoscopy, presented by Prof. Léon Bernard and Mr. A. Soulas; a sound film on appendectomy, projected by Professor Gosset, and an operation for cancer of the breast, by the same author. For comparison, one of the first surgical films ever made (that prepared in 1898 by Doyen) was presented.

Personal

Dr. Harvey Cushing was one of the five foreign scientists honored, this year, by the bestowal of the degree of doctor honoris causa by the University of Paris.

BERLIN

(From Our Regular Correspondent)

April 10, 1933.

The Number of Physicians in Germany

Statistics recently published in the Reichsmedizinikalkalender show that the number of physicians in Germany has increased since 1930 from 50,671 to 52,518, which includes 3,405 women physicians. This last census was taken as of Nov. 1, 1932. The increase amounts to 3.56 per cent, the male physicians showing an increase of 2.9 and the women physicians of 6.4 per cent. The increase in the various provinces and regions of the German reich has not been uniform. Of the 52,518 physicians, 74.1 per cent are private practitioners, 5.6 per cent are directors in institutions, and 14.5 per cent occupy various posts in institutions. The physicians who have neither a private practice nor a panel practice in the Krankenkassen amount to 5.8 per cent. An enumeration that was undertaken by the Verband der Aerzte Deutschlands gave a total of 15,828 specialists, as compared with 15,206 in 1930, which shows an increase of about 4 per cent. The number of specialists has increased not only in the absolute sense but also with respect to the total number of physicians. About 36.5 per cent of the physicians engaged in active practice may be counted among the specialists, as against 36.1 per cent in 1930. The 15,828 specialists are distributed among the following groups:

Distribution of Specialists in Germany

Specialty	1932		1930	
	No. of Physi- cians	Percent- Whole Group	No. of Physi- cians	Percent- Whole Group
Gynecologists	1,647	10.4	1,605	10.6
Surgeons	1,349	8.5	1,320	8.7
Surgeons and gynecologists.....	843	5.3	793	5.2
Dermatologists	1,340	8.5	1,309	8.6
Dermatologists and urologists.....	617	3.9	651	4.3
Urologists, including surgery.....	174	1.1	169	1.1
Internists	2,205	13.9	1,921	12.6
Internists and neurologists.....	301	1.9	274	1.8
Neurologists and psychiatrists.....	1,557	9.8	1,510	9.9
Ophthalmologists	1,391	8.8	1,363	9.0
Rhinologists, laryngologists, otologists.....	1,527	9.7	1,509	9.9
Pediatricians	1,242	7.9	1,230	8.1
Gastro-enterologists	230	1.5	235	1.5
Groups of Specialists				
Orthopedists	209	1.3	187	1.2
Surgeons and	284	1.8	272	1.8
Phthisiologist	448	2.8	464	3.0
Specialists in	166	1.0	166	1.1
Roentgenologists	298	1.9	227	1.6
Totals.....	15,828	100.0	15,206	100.0

A scrutiny of the table reveals that in no group have there been any unusual changes since 1930. The percentage of 36.5 represents the proportion of specialists for the entire reich. In cities of 50,000 or more population the relation of specialists to the total number of physicians is much higher, and ranges between 40 and 60 per cent.

Infection Due to Tsetse Flies

The settlement of central Africa depends on whether means can be found of immunizing people and animals against the tsetse fly disease and trypanosomiasis. A number of species of flies belonging to the genus *Glossina* act as the causative agents of both these endemic diseases, which are transmitted by trypanosomes. The important task remains of finding a method of vaccination against the trypanosomes. Prof. Klaus Schilling, who has been studying these problems in eastern Africa, discussed recently, before the Berliner Mikrobiologische Gesellschaft, the possibilities of propagating tsetse flies in the laboratories. It has been found that many vaccinal agents that are effective in the laboratories are ineffective when injected into human beings or animals in Africa. Schilling explains this by assuming that the properties of the causative agents have changed through artificial transmission in the

laboratories. He collected in Africa pupas of the tsetse fly, which, since three weeks elapses before the fly emerges, can reach Berlin by airplane before that takes place. In Berlin, the flies are allowed to become infected from diseased animals and are then permitted to bite healthy animals. It is therefore now possible to test in advance remedies and vaccines against the disease. Schilling hopes that it will be possible to work out an effective method of vaccination.

Restriction of Licenses Issued to Foreigners

The federal commissioner of the Prussian ministry of the interior has addressed the following circular letter to the subordinate bureaus:

The overcrowding of the professions of medicine, dentistry and pharmacy, in the German reich, makes it necessary to restrict, as far as possible, the undue rush of applicants for licensure in these professions. Exceptions to the regulations governing examinations for physicians, dentists and pharmacists will, therefore, henceforth be granted only in very special cases. No further licenses will be granted foreign physicians to practice in Germany. This applies also to foreigners who are graduates of German secondary schools. Exceptions will be considered only in special cases involving foreigners with German antecedents.

Henceforth, all students on registering for medical, dental and pharmaceutical examinations, and all applicants for a license to practice pharmacy must submit acceptable evidence as to their citizenship. Petitions of foreigners (also in connection with applications for medical internships) must be presented, with the necessary documentary evidence, to the minister of the interior for his decision. In certain instances, foreigners may be admitted to an examination and to consideration for licensure in the field of pharmacy with the distinct reservation that such foreigners lay no claim to the actual granting of a license to practice. Also petitions for the granting of a license to practice as a physician, dentist or pharmacist must henceforth be accompanied by valid official documentary evidence with regard to citizenship.

Otto Lubarsch Is Dead

Otto Lubarsch, the eminent pathologic anatomist, who retired from active service several years ago, has died at the age of 73. As a pathologic anatomist, Lubarsch suffered many vicissitudes of fortune until he finally attained a much coveted post, the chair formerly occupied by Virchow. He was an assistant in the institutes of Zurich, Breslau and Giessen; worked in the zoological institute in Naples; became an assistant in Rostock; was given, on founding of the hygienic institute in Posen, the anatomicopathologic department; became infected there with tuberculosis; spent a long time in sanatoriums, and then retired to Gross-Lichterfelde and did dissection work in the Schwenninger Hospital; became director of the new pathologic-bacteriologic institute in Zwickau; obtained later the chair of pathology in Kiel, and, after the death of Orth, received a call to the University of Berlin, which post he held until he reached the age of retirement. Lubarsch had as an investigator indefatigable zeal. He was a splendid teacher, organizer and administrator. From his published reminiscences, which bear the title "Ein bewegtes Gelehrtenleben," it may be seen how frequently he was involved in controversies, some concerning scientific questions and others political problems.

RIO DE JANEIRO

(From Our Regular Correspondent)

March 15, 1933.

Vaccination Against Yellow Fever

Dr. Henrique de Beaurepaire Aragão, of the Oswaldo Cruz Institute, published in the February 4 issue of *Brasil-medico* an article on vaccination against yellow fever. The work done with living virus has been successful in five human cases. Among the results obtained up to the present time should be mentioned the establishment of a simple and practical technique of human vaccination against yellow fever with serum-virus without the danger resulting from the use of pure virus. The method has the advantage of causing only slight reactions. The technic is as follows: 1. An intramuscular injection is made, in the deltoid of the person to be vaccinated, of 3 cc. of mixed serum taken from four persons who have had yellow fever, and six hours later a subcutaneous injection of a mixture of 2 cc. of the same serum and of 0.001 Gm. of fresh

cerebral virus of the mouse or a corresponding quantity of dry virus. When fresh virus is employed, the author takes the brain from a dying mouse, inoculates a small part of it in agar, and freezes the remainder. If, after twenty-four hours, there is no growth, proving the sterility of the material, the brain is thawed, weighed and conveniently diluted. The emulsion used for vaccinating, whether made with dry or fresh virus, must first be inoculated in the mouse to verify its virulence. As it is not proved that with this method the virus does not pass into the blood of the vaccinated person, it is thought advisable to keep the vaccinated person isolated, especially if he has fever. In places where the stegomyia index is low, this precaution can be ignored. No special diet is necessary, although it is recommended that alimentation be moderate. Revaccination, if necessary, can be done twelve days after the first vaccination, and, in this case, only a dose of 0.001 Gm. of cerebral virus of the mouse is employed without any previous or simultaneous dose of serum. Judging from the two cases already observed, the author does not find it necessary to keep the patient protected by mosquito netting except in case of fever. 2. A point that came up is the possibility of replacing in the serum-virus vaccinations the human serum by the serum of other animals, especially large animals, such as calves and horses. Even if it is necessary to get the serum from sheep or goats, its use will be practical. The investigations of the author and his collaborators prove that it is possible to immunize rabbits, goats and calves with the virus of yellow fever so that the serum of these animals acquires protective properties for the macacus. It may therefore be possible to dispense with human serum, which would make the vaccination even more practical. If human serum is found to have a real advantage over animal serum, it will be necessary to organize a body of donors as done for the prevention of measles, for blood transfusions, and so on. 3. The experiments made on men and animals seem to demonstrate that the problem of protecting animals and man against yellow fever is solved. There is no doubt of its efficacy in view of the work of the author and his assistants and that of American and French workers on this subject, and which is here again confirmed. It will now be necessary to use the method in a large number of cases to simplify it. This will be the object of the author and his assistants in the future.

Abdominal Aortography

Dr. P. A. Osorio published in the June 1932 issue of the *Revista de radiologia clinica* of Porto Allegro (Rio Grande do Sul) a study of abdominal aortography, which was practiced for the first time in Portugal in 1925 by Santos, Lamas and Caldas. Aortography consists in the injection of an opaque solution in the abdominal aorta. The author has made about 100 aortographies without accident. He has used principally 30 cc. of a 90 per cent solution of methiodal under splanchnic anesthesia. He makes stereoscopic roentgenograms.

To become proficient in this procedure, he made studies on the cadaver, using iodized poppyseed oil in these cases.

Osorio describes his technic. With a needle 12 cm. in length, he makes a puncture to the left of the spinous processes, just above the twelfth rib; i. e., at the level of the twelfth dorsal or the first lumbar vertebra. He uses an arteriograph constructed like the original apparatus of R. Santos-Gentile, which, under a pressure of three atmospheres, allows the injection to be made in six seconds. He takes a roentgenogram at the beginning and before the end of the aortic injection. He injects 15 cc. in three seconds and takes the first plate; after a moment's rest and a second injection of 15 cc., he takes the second plate. The principal uses of aortography are for the diagnosis of aneurysms of the abdominal vessels, of anomalies of the circulation, of renal tumors and of tumors of the left hypochondrium. This method has already proved practical.

BELGIUM

(From Our Regular Correspondent)

March 11, 1933.

Rôle of the Medical Service in the Electrical Industries

Addressing recently the Société belge de médecine et de chirurgie du travail, Mr. van Themsche discussed the rôle of the medical service in the electrical industries. His address contains items of interest to industrial physicians and labor experts. Van Themsche discussed the etiology of electrical accidents and the pathologic effects of an electric current. He then took up the problem of how to care for persons injured by electricity. Among the measures, he cited artificial respiration and oxygen therapy. The prevention of electrical accidents may be accomplished in two ways: by applying medical principles of vocational guidance in the selection of workmen, and by waging a campaign against the negligence of professional electricians and the ignorance of users.

Use of Quinine in the Katanga Region

Addressing the Cerele médical of Katanga, Mr. Staudt coordinated and summarized the reports rendered by the physicians of Katanga on the prophylactic use of quinine at various points in the province during the last rainy season (1931-1932). His conclusions correspond closely to those of Dr. Van Nitsen, as set forth in his article: 1. Quinine administered in prophylactic doses to native malarial children, who continue to live in a region in which malaria is widely prevalent, is incapable of preventing reinfections or of effecting a cure. 2. Quinine does, however, increase the resistance of the organism toward malarial infection, which is evidenced by a reduction in the general morbidity and in the mortality. 3. Quinine treatment should begin with a curative course and should be continued. 4. The best results were secured with adequate daily doses. 5. The general prophylactic use of quinine is burdensome and requires careful supervision. 6. The prophylactic use of quinine will not in itself solve the malaria problem.

The National Institute of Radiotherapy

Mr. Francqui, minister of state, has appointed the administrative council of the National Institute of Radiotherapy, which was created recently by a royal decree. The purpose of the institute is the scientific and clinical study of the effects of irradiations on malignant tumors and on all disorders susceptible of radiotherapeutic treatment in general. The Union minière of Upper Katanga will soon place 15 Gm. of radium at the disposal of the new institute, whereas the largest amount of radium in any foreign institute, as far as is known, is 11 Gm. The institute will install its laboratories and its services in quarters in the Hôpital Brugman, as affected by the Commission d'assistance publique of the city of Brussels.

The Distribution of Physicians in Various Countries

The following statistics on the numerical relations of the physicians to the population, in various countries, have been taken from the journals of Germany and the Netherlands: In Austria there is a physician for every 837 inhabitants (in the capital, 520); in Spain, for every 1,000 inhabitants; Canada, 1,066 inhabitants (968); Great Britain, 1,069 (955); Hungary, 1,100 (300); Switzerland, 1,140; Greece, 1,166; Cuba, 1,170; Germany, 1,237; the United States, 1,326; Palestine, 1,333 (603); Denmark, 1,346; Estonia, 1,411; Netherlands, 1,417 (1,250); Danzig, 1,428; Belgium, 1,460; Latvia, 1,461 (487); Norway, 1,555 (600); France, 1,596 (630); Czechoslovakia, 1,666 (533); Luxemburg, 1,666 (1,250); Uruguay, 1,666; Portugal, 2,333; Sweden, 2,660; (1,427); Brazil, 2,666; Rumania, 2,879; Bulgaria, 2,900; Poland, 3,100, and Yugoslavia, 3,549.

Marriages

HERMAN C. GROMAN, Hammond, Ind., to Miss Jeannette Edwards of Waterloo, Iowa, in Chicago, March 19.

ALVIN WORTHAM PEEDE to Miss Eula Johnson, both of Lillington, N. C., in Columbia, S. C., March 11.

RICHARD ROBBINS BARBER, Freeport, N. Y., to Miss Mary Brewster Scovill at Stamford, Conn., April 22.

NEWTON F. LANCASTER, Waynesville, N. C., to Miss Marion Houchias of Richmond, Va., April 8.

GIDEON W. STONE to Miss Hannah Francis, both of Knoxville, Tenn., April 15.

Deaths

Judd Campbell Shellito ☉ Independence, Iowa; Johns Hopkins University School of Medicine, Baltimore, 1915; member of the Radiological Society of North America; served during the World War; aged 43; died, April 16, in St. Luke's Hospital, Cedar Rapids, of injuries received in an automobile accident.

Elijah S. Peacock ☉ Harrison, Ga.; University of Georgia Medical Department, Augusta, 1888; University of Maryland School of Medicine, Baltimore, 1891; past president of the Washington County Medical Society; member of the county board of health; aged 72; died, April 15, of cerebral hemorrhage.

James Anderson Donaldson, Okolona, Miss.; Memphis (Tenn.) Hospital Medical College, 1898; member of the Mississippi State Medical Association; for ten years health officer of Okolona; aged 56; died, March 27, of cirrhosis of the liver.

James Oscar C. Wiley ☉ Portland, Ore.; University of Oregon Medical School, Portland, 1899; aged 61; for many years on the staff of the Good Samaritan Hospital, where he died, February 21, of angina pectoris and cirrhosis of the liver.

John Archie Cameron ☉ St. Paul; University of Minnesota College of Medicine and Surgery, Minneapolis, 1902; fellow of the American College of Surgeons; on the staff of St. Luke's Hospital; aged 63; died, April 4, of heart disease.

Clarence Rostow, Rochester, N. Y.; Medico-Chirurgical College of Philadelphia, 1898; member of the Medical Society of the State of New York; aged 58; died, March 17, in the Strong Memorial Hospital, of carcinoma of the cecum.

Carlo Gio Giaconì Scaparone, San Francisco; Regia Università di Torino Facoltà di Medicina e Chirurgia, Italy, 1890; aged 65; died, February 15, in the Letterman General Hospital, of arteriosclerosis and cerebral hemorrhage.

Arthur Curtis Richards ☉ Mount Gilead, Ohio; Ohio State University College of Medicine, Columbus, 1917; served during the World War; aged 44; died, April 15, in the White Cross Hospital, Columbus, of cerebral hemorrhage.

Jacob Glass, New York; Eclectic Medical College of the City of New York, 1901; member of the Medical Society of the State of New York; aged 62; died, April 9, in the Beth Israel Hospital, of cerebral hemorrhage.

Horace B. Guiher, Smithfield, Pa.; Jefferson Medical College of Philadelphia, 1887; member of the Medical Society of the State of Pennsylvania; aged 70; died, March 30, of cerebral thrombosis.

Franklin Grove Bigoney, Lansdale, Pa.; Jefferson Medical College of Philadelphia, 1884; member of the Medical Society of the State of Pennsylvania; aged 72; died suddenly, April 4, of heart disease.

Louis E. Bergeron, Baton Rouge, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1904; aged 57; died, March 16, of cerebral hemorrhage and cardiac disease.

Leon Gottschalk ☉ Marcus Hook, Pa.; Medico-Chirurgical College of Philadelphia, 1899; aged 58; died, April 5, in St. Agnes' Hospital, Philadelphia, of myocarditis and arteriosclerosis.

William E. Goodsell, Roswell, N. M.; Niagara University Medical Department, Buffalo, 1896; member of the New Mexico Medical Society; aged 69; died suddenly, April 4, of heart disease.

David Erastus Baker, Newton, Mass.; Harvard University Medical School, Boston, 1883; member of the Massachusetts Medical Society; aged 75; died, April 9, of lobar pneumonia.

John Everett Burnette, Boston; University of Michigan Medical School, Ann Arbor, 1899; served during the World War; aged 59; died suddenly, April 6, of cardiovascular disease.

Franklin Chace Downing ☉ Stockbridge, Mass.; Columbia University College of Physicians and Surgeons, New York, 1896; aged 66; died, March 18, of carcinoma of the prostate.

George Rex Andrews, Cedar Key, Fla.; Medical College of Indiana, Indianapolis, 1897; fellow of the American College of Surgeons; aged 58; died suddenly, April 6, of heart disease.

Henry Burdick, Copperas Cove, Texas (licensed, Texas, under the Act of 1907); member of the State Medical Association of Texas; aged 70; died, March 31, of heart disease.

Alvin R. McCarthy, Pasadena, Calif.; Medical Department of the University of the City of New York, 1871; aged 88; died, March 13, of heart disease and arteriosclerosis.

Alexander Wayne Holland, Dallas, Texas; University of Louisville (Ky.) School of Medicine, 1880; aged 78; died, April 2, of a fractured femur as the result of a fall.

Charles W. Loomis, Lake Charles, La.; Kansas Medical College, Topeka, 1893; member of the Louisiana State Medical Society; aged 65; died, April 3, of septicemia.

John Sampson Newcomb ☉ Pawtucket, R. I.; Albany (N. Y.) Medical College, 1888; member of the Washington State Medical Association; aged 70; died, April 13.

Richard Ray, Kansas City, Mo.; University Medical College of Kansas City, 1899; formerly member of the state legislature; aged 69; died, April 2, of cerebral hemorrhage.

Joseph Jordan Deshler, Glidden, Iowa; College of Physicians and Surgeons, Baltimore, 1880; aged 76; died, March 31, of cirrhosis of the liver and diabetes mellitus.

Robert Hamilton, Smethport, Pa.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1895; aged 63; died suddenly, in March, of heart disease.

Arthur Blackington Morse, Lewis, Iowa; Drake University College of Medicine, Des Moines, 1903; aged 70; died, March 5, in Atlantic, of pneumonia.

Millie Jane Chapman, Springboro, Pa.; Homeopathic Hospital College, Cleveland, 1874; aged 87; died, April 11, of carcinoma of the nose and face.

Edward T. Moore, Kansas City, Mo.; Missouri Medical College, St. Louis, 1879; aged 76; died, March 29, as the result of an injury received in a fall.

Eugene S. Akers, Webster, Wis.; Detroit Homeopathic Medical College, 1875; aged 82; died, March 27, in Green Bay, of carcinoma of the stomach.

John Clark Bowman ☉ Cameron, Mo.; Washington University School of Medicine, St. Louis, 1906; aged 60; died, April 2, of heart disease.

Frank Silsby Tripp, Harveysburg, Ohio; Medical College of Ohio, Cincinnati, 1883; aged 75; died, February 19, in Dayton, of prostatitis.

Karl Sellers Kennard, New York; Baltimore Medical College, 1899; aged 56; died, April 9, of lobar pneumonia and chronic myocarditis.

Eli Grellet Jones, Middletown, Md.; Dartmouth Medical School, Hanover, N. H., 1872; aged 82; died, January 26, of heart disease.

George Lewis Dickerson, Jacksonville, Fla.; Medical College of Indiana, Indianapolis, 1897; aged 63; died, March 16, of heart disease.

Edwin Lane Fassett, San Francisco; Hahnemann Medical College of the Pacific, San Francisco, 1903; aged 66; died, March 25.

William Paterson, Cleveland; Cleveland Medical College, 1891; aged 68; died, April 5, of coronary occlusion and arteriosclerosis.

William Collins Oyer, Pittsburgh; Jefferson Medical College of Philadelphia, 1889; aged 76; died, March 25, of angina pectoris.

Fred W. Braner ☉ Collinsville, Ill.; American Medical College, St. Louis, 1897; aged 62; died, April 9, of erysipelas.

Christopher Porter Gibson, Minneapolis; Chicago Medical College, 1873; aged 91; died, March 20, of pneumonia.

G. Washington Weeter, Grand Island, Neb.; Cleveland Medical College, 1876; aged 85; died, March 9, of senility.

Robert A. Seaborn ☉ Detroit; Detroit College of Medicine, 1892; aged 73; died, April 2, of coronary thrombosis.

Correspondence

TUBERCULIN IN TUBERCULOUS LARYNGITIS

To the Editor:—At a recent meeting of the New York State Medical Society tuberculin therapy was advocated, in the Section on Otolaryngology, for tuberculous laryngitis. In the discussion, no reference was made to the great danger that tuberculin is liable to provoke severe and extensive focal reactions. It is well known that pulmonary tuberculosis may be present without giving rise to conscious symptoms, and, in children, unsuspected tuberculous infiltration of the tracheo-bronchial lymph glands is not uncommon. Injudicious use of tuberculin in such cases might lead to serious consequences. Even in the fields of dermatology and ophthalmology, in which tuberculin has proved its usefulness, this possibility should be kept in mind and tuberculin therapy should not be instituted without previously determining whether there exists in the lungs a type of lesion contraindicating it. Particularly is this true in tuberculous laryngitis, which, for all practical purposes, is secondary to pulmonary tuberculosis.

B. T. McMAHON, M.D., Loomis, N. Y.
Associate Physician, Loomis Sanatorium.

"LATE ETHER CONVULSIONS"

To the Editor:—In his article on "Late Ether Convulsions" (THE JOURNAL, April 15), Dr. J. B. Sears suggests that additional such cases should be reported.

In a pathologic investigation on thirty-four cases of what had formerly been termed "thymic death" (*Am. J. Dis. Child.*, to be published), I reported five in which death occurred during ether anesthesia; in two, surgical procedure had hardly been started before death occurred. Convulsions may or may not be present in such cases. The thymus may or may not be enlarged (the average weight of the 34 thymuses was 35.2 Gm.). Because, in all, pulmonary edema has been the only constantly occurring condition found at autopsy and because a similar if not identical edema is reported to be present in human anaphylactic shock, I believe that death is the result of a primary anaphylactic edema. Sears noted that pulmonary edema was present in his case in which autopsy was performed. That local and general anesthetics may be the source of allergic anaphylactic symptoms has been set forth elsewhere (*Arch. Otolaryng.*, to be published).

Among the various explanations of death enumerated by Sears, most are well in accord with features encountered in human anaphylactic shock: "excess of carbon dioxide in the system," "anoxemia of brain, due to edema and collapse of lung bases," "increased cerebral vascularity," "acute toxemia," "histamine bodies liberated," "unexplained tendency to develop convulsions," "overetherization," and "hypoglycemia."

GEORGE L. WALDBOTT, M.D., Detroit.

ESSENTIAL HEMATURIA

To the Editor:—In THE JOURNAL, April 1, page 1076, is an abstract of an article on essential hematuria, by Löfberg. In reference to the treatment of this condition, the statement is made that "of the various operative procedures, nephrectomy best meets the indications." Löfberg reports eight cases observed in the course of ten years at the General Hospital at Malmö, Sweden. A nephrectomy was performed in seven.

During the past seventeen years I have seen ten patients with hematuria in whom no lesion could be found to account

for the profuse bleeding. Ureteral strictures were among the disorders suspected as causative factors and were excluded by the usual urologic methods. Yet, in all of these patients, dilation of the ureters was followed by cessation of blood. From one to three dilations were required, according to the size of the catheters introduced and the length of time they were retained. When possible, a number 9 catheter was passed; catheters of this size, or at times even larger, are desirable for two reasons: first, to lessen the tendency to stoppage by clots; second, to secure dilatation. In recent years the catheters have been left in place for at least twenty-four hours.

Admitting that the beginning of slight ureteral obstructions is difficult or impossible to recognize, it seems significant that in this group profuse hematuria was the only urologic symptom and that pyelograms showed that the ureters and renal pelvis were normal. Nephritis with blood in the urine has not been included in this group, nor has there been one patient in whom an excessively high blood pressure appeared to be the cause of occasional hematuria.

In the subsequent history of the cases of essential hematuria there was little or no tendency to recurrence after the ureter had been well dilated. On the contrary, ureteral strictures show a definite tendency to recur. The subsequent freedom from symptoms and bleeding, therefore, seems to prove the correctness of the diagnosis in these ten cases, which were classed as essential hematuria.

I have not removed a kidney on account of essential hematuria since 1915, and I recommend that adequate ureteral dilation be employed in the treatment of this disorder before resorting to a measure as radical as nephrectomy.

EDGAR G. BALLENGER, M.D., Atlanta, Ga.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EFFECTS OF DUSTS, PARTICULARLY LIME, ON HEALTH

To the Editor:—1. It has long been noted that new workers in the lime sheds, shoveling unslaked lime, sometimes have severe epistaxis, often daily. If they have the fortitude to continue their work, these hemorrhages cease and never reappear. Why the hemorrhages? 2. It has been noted that sufferers from chronic catarrh of the nasal passages employed in the sheds promptly become symptomless. Further, no employees ever complain of rhinitis or other infections of the upper respiratory tract. Why? Does the lime destroy the glands in the mucosa? If such is the case, is the impairment of the glands permanent? Is it incompatible with perfect health? Please omit name.

M.D., Missouri.

ANSWER.—1. Epistaxis, in new workers, is found in many industries providing corrosive or highly irritating dusts, vapors or gases. Sulphur dioxide gas and chromium dust are examples of such industrial agents. The new worker, with an undamaged mucous membrane, presents areas in which the blood vessels are near the surface and easily affected by the ulcerating substances in the inhaled air. Further exposure leads to the formation of a protective exudate and eventually there may develop some thickening of the tissues. Blood vessels become less accessible.

Visitors in plants using sulphur dioxide are prone to immediate violent coughing and sneezing. Scores of workers in the same room are unaffected. It is common to refer to the "immunity" developed by these workers. Instead, it is likely that their membranes are merely protected by exudates or that hyperplastic changes have led to less responsive cells. A similar action is believed to result from contact with unslaked lime on nasal membranes.

2. It is unlikely that any beneficial action results from exposure to irritant dusts. Just as women make use of harsh astringents to destroy sweat glands under their arms, so lime workers (among others) may destroy secreting cells along nasal passages. In either instance the results obtained are of

doubtful value. Many traditions hold that respiratory infections seldom or never arise in various industries employing or generating such agents as chlorine, sulphur dioxide, alkali dusts or vapors. Careful examinations frequently fail to establish the actuality of any such occurrences, and medical treatments based on faith in the advantages of such exposures are usually destined to short lives.

Any considerable quantity of dust entering the respiratory tract is to be regarded as harmful. Extensive exposure to unslaked lime is capable of creating both acute and chronic injury. Permanent damage is quite possible. A perforated nasal septum is a well known permanent consequence.

HIRSUTISM IN YOUNG GIRL

To the Editor:—I have a patient, a white girl, aged 18, who since puberty has been worried by an excessive and abnormal growth of hair on practically all parts of her body. None of her family have had similar trouble. She has to shave her face daily. She has a heavy beard, masculine pubic hair, hair about the nipples, a line of hair continuous from the pubic region upward along the linea alba, and a relatively thick growth on the thighs and legs. Otherwise she is apparently a normal girl, with feminine characteristics, mentally and physically. Menstruation occurs regularly but is scanty, the blood being of a dark color and not bright red. She is a virgin and I have not yet made a pelvic or a rectal examination. Her blood is normal. The basal metabolic rate is +4. The diagnosis seems to be between hypertrichosis and hirsutism. How should one treat this patient? Should one advise laparotomy to rule out a tumor of the suprarenal cortex or ovary? Please omit name.

M.D., District of Columbia.

ANSWER.—This condition is probably due to a tumor or hyperplasia of the suprarenal cortex. However, a laparotomy should not be advised until a pelvic examination has been made either by rectal examination or by vaginal examination under an anesthetic to rule out an ovarian tumor. A pineal tumor is extremely unlikely in a girl but should be considered. When these possibilities have been exhausted, a laparotomy should be considered.

ACNE ROSACEA

To the Editor:—A woman, aged 24, married, with no children, has a condition of flushing on the nose which seems to be brought on by nervous strain or excitement. This condition comes on suddenly; it may last five minutes or half an hour, during which time the nose is very red and the blood vessels are congested. There is a moderate amount of acne on the face. Also this condition seems to be a little worse near the time of the menstrual period. This flushing has been present several years but has been worse in the last few months. I feel that this is a rosacea, and possibly an acne rosacea. What is the prognosis and what treatment would you advise? Please omit name.

M.D., Kansas.

ANSWER.—This is probably a case of acne rosacea. The prognosis is good provided the underlying factors can be remedied. A careful study of the gastro-intestinal and cardiovascular systems is indicated. The ingestion of alcohol, tea, coffee and spices should be discontinued. Any disturbance of the female reproductive system should be investigated. Local treatment with mild sulphur lotions may be of benefit. Solution of sulphurated lime in a dilution of 1 to 16 may be dabbed on at night. Mild desquamating doses of ultraviolet radiation may be used. Internally, ergot is sometimes of value.

GERMANIN (BAYER 205) IN PEMPHIGUS FOLIACEUS

To the Editor:—In the March 19 issue of THE JOURNAL (p. 839) I noted that a request for information concerning a new drug from Germany for intravenous treatment of pemphigus is answered by the statement that "no new German drug has gained any reputation for its value in these cases." Although, of course, I do not know precisely which new drug the inquiry referred to, I take the opportunity to mention that several clinics have recently reported (Berggreen, P.: München med. Wchnschr. 79: 1842 [Nov. 11] 1932. Fuhs: Dermat. Wchnschr. 95: 1342 [Sept. 10] 1932. Loche, *ibid.* 95: 1658 [Nov. 12] 1932) favorable results from Germanin in the treatment of pemphigus. Acetasone and sulpharsphenamine, alone or in combination with endocrine preparations, have been recommended lately by Galewsky, Kreibich, Pautrier, Buschke and Wolff. No doubt the inquirer is familiar with Schamberg's (Philadelphia) colonic lavage, which was effective in one desperate case.

KARL G. ZWICK, M.D., Cincinnati.

ANSWER.—Bayer 205 (Germanin) has not been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies. A Query and Minor Note appeared in THE JOURNAL, May 23, 1925, page 1591.

The use of Germanin in pemphigus was introduced by Veiel (München. med. Wchnschr. 78:2048 [Nov. 27] 1931), who reported four cases of chronic pemphigus, of which three cleared up under Germanin after proving refractory to other treatment. One patient died of pneumonia. Since Veiel's report and up to

November, 1932, thirteen other cases of pemphigus or of dermatitis herpetiformis had been reported in the German literature; all these cleared up under Germanin given intravenously:

Mühlpfordt, H.: München. med. Wchnschr. 79: 356 (Feb. 26) 1932, two cases.

Sunder-Plassmann, O.: München. med. Wchnschr. 79: 1111 (July 8) 1932, one case.

Urbach: Dermat. Wchnschr. 95: 1342 (Sept. 10) 1932, four cases.

Fuhs: Dermat. Wchnschr., one case.

Berggreen, P.: München. med. Wchnschr. 79: 1842 (Nov. 11) 1932, two cases.

Loche: Dermat. Wchnschr. 95: 1658 (Nov. 12) 1932, three cases.

Several of the authors point out that the necessary dosage is close to the toxic dosage; nephritis and skin eruptions occur but usually clear up spontaneously.

ANGULAR CONJUNCTIVITIS

To the Editor:—During the past few months I have observed a large number of cases in which the palpebral and bulbar conjunctiva were both injected in varying degrees, in some cases the bulbar conjunctiva being very red. There is apparently no discharge and the lids do not stick together in the morning, though there is some lacrimation and photophobia. I have been unable to get a satisfactory report on a smear, and cultures do not offer any help. I have tried the various conjunctival antiseptics from mild silver protein in the various strengths to the newer preparations including metaphen and merthiolate. The results in each case are uniformly poor. Will you please attempt to diagnose the condition and outline treatment? I enclose stamped envelop for reply. Please omit my name if this subject appears in THE JOURNAL.

M.D., Michigan.

ANSWER.—The condition may well be "angular conjunctivitis" (Morax-Axenfeld diplobacillary infection). If so, zinc sulphate, 0.25 per cent, used four times a day for a month, will relieve nearly every case; but there may be a recurrence and a second course may be needed. More courses are seldom required.

DETECTION OF POISONS AFTER EMBALMING

To the Editor:—I should like to obtain some information in regard to the legal aspects of a man who may possibly have taken poison. I made a postmortem examination of this man and tied off the stomach in situ and sent it to a toxicologist. However, the body had been embalmed, and the question now arises what poison this man might have taken which could not be found at the time of the postmortem following embalming. Will you please send me an answer to this problem as soon as possible.

C. WAYNE GUILDNER, M.D., Kenesaw, Neb.

ANSWER.—When compounds of arsenic and mercury were used as embalming fluids, many difficult problems were presented in the chemical examination for poisons. Now, most states prohibit the use of arsenic and mercury in embalming fluids, and mixtures or solutions of formaldehyde are used generally. Occasionally, however, formaldehyde embalming fluids contain traces of arsenic or other poisons. It is said that formaldehyde may interfere with the detection of poisons in some cases, the most important of which is poisoning with cyanides.

EFFECTS OF URETHRAL INJECTIONS

To the Editor:—In Queries and Minor Notes (THE JOURNAL, March 11, p. 766) a California physician brings up the question of urethral injection and asks whether it is not true that if a solution is retained for ten or even five minutes will it not run back, carrying with it the infection. In his experience, he says, that does happen. In your reply you say that "if the anterior urethra is only partially filled with injected fluid, the tonic contraction of the cut off muscle will prevent any of it passing into the posterior urethra, no matter how long it is retained." May I be permitted to express a dissenting opinion? Over thirty years of experience in the injection method of urethral medication convinces me that the correspondent is correct in his statement that the solution will run back into the posterior urethra; but his second statement that this backflow carries with it the infection is open to serious question. The cardinal advantage of the urethral injection is this overflow into the posterior urethra, because it thereby medicates that part of the canal and acts as a prophylactic against the spread of the infection posteriorly. Even when the posterior urethra is definitely involved, the best treatment for this condition is an injection into the anterior urethra, held five or ten minutes, permitting the solution (of a bland, nonirritating silver product) to seep back gently, painlessly and without the necessity of forcing the cut off muscle. I think your statement that the tonic contraction of the cut off muscle will prevent any of the solution passing into the posterior urethra is entirely at variance with actual experience, which one can prove by injecting 2 or 3 drachms of the solution, retaining it in the anterior urethra for five minutes and then measuring the amount that flows out. Usually less than 30 per cent of the amount injected comes out; the rest goes back into the posterior urethra, and that, as I have said before, is the supreme advantage of the hand injection over the other methods in the treatment of urethral infections. I am sure the experience of every urologist has taught him the same lesson.

ABRAHAM L. WOLBARST, M.D., New York.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Milwaukee, June 12. *Applications should be filed before May 15.* Sec., Dr. William H. Wilder, 122 South Michigan Blvd., Room 1417, Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The general oral, clinical and pathological examination will be held in Milwaukee, June 13. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Milwaukee, June 12. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

CALIFORNIA: Reciprocity. San Francisco, June 14. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: Basic Science. Prerequisite to license examination. New Haven, June 10. Address State Board of Healing Arts, 1895 Yale Station, New Haven.

DELAWARE: Wilmington, June 13-15. Sec., Dr. Harold L. Springer, 1013 Washington St., Wilmington.

FLORIDA: Jacksonville, June 12-13. Sec., Dr. William M. Rowlett, Box 786, Tampa.

GEORGIA: Atlanta, June 14-16. Joint Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

ILLINOIS: Chicago, June 27-30. Supt. of Regis., Mr. Paul B. Johnson, State House, Springfield.

INDIANA: Indianapolis, June 20-22. Sec., Dr. William R. Davidson, 413 State House, Indianapolis.

IOWA: Iowa City, June 6-8. Dir., Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KANSAS: Kansas City, June 20-21. Sec., Dr. C. H. Ewing, Larned.

KENTUCKY: Louisville, June 7. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

MARYLAND: Regular. Baltimore, June 20-23. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. *Homoeopathic.* Baltimore, June 20-21. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MINNESOTA: Basic Science. Minneapolis, June 6-7. Sec., Dr. J. Charney McKinley, 126 Millard Hall, University of Minnesota, Minneapolis.

MISSOURI: St. Louis, June 7-9. Address State Board of Health, Capitol Bldg., Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. The examinations will be held at centers where there are five or more candidates, June 26-28 and Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: Omaha, June 7-9. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEW JERSEY: Trenton, June 20-21. Sec., Dr. James J. McGuire, 1101 Tregton Trust Bldg., Trenton.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 26-29. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 19. Sec., Dr. B. J. Lawrence, 503 Professional Bldg., Raleigh.

OHIO: Columbus, June 6-9. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

SOUTH CAROLINA: Columbia, June 27. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

TEXAS: Galveston, June 20-22. Sec., Dr. T. J. Crowe, 918-19-20 Mercantile Bldg., Dallas.

UTAH: Salt Lake City, June 28-29. Dir., Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.

VERMONT: Burlington, June 21-23. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 21-23. Sec., Dr. J. W. Preston, 803 Medical Arts Bldg., Roanoke.

WISCONSIN: Basic Science. Milwaukee, June 17. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. *Regular.* Milwaukee, June 27-29. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.

WYOMING: Cheyenne, June 5. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

Pennsylvania January Examination

Mr. Charles D. Koch, secretary, Pennsylvania State Board of Medical Education and Licensure, reports the oral and written examination held in Philadelphia, Jan. 3-7, 1933. Thirty-three candidates were examined, 32 of whom passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
University of Georgia Medical Department.....	(1930)		1
Loyola University School of Medicine.....	(1932)		1
Baltimore Medical College.....	(1898)		1
Johns Hopkins University School of Medicine.....	(1929)		1
University of Maryland School of Medicine and College of Physicians and Surgeons.....	(1931),*		2
Tufts College Medical School.....	(1930)		1
Creighton University School of Medicine.....	(1923)*		1
Cornell University Medical College.....	(1931)		1
Long Island College Hospital.....	(1922)		1
Hahnemann Medical College and Hospital of Philadelphia.....	(1931,2)		2
Jefferson Medical College of Philadelphia (1930,3), (1931,5)			8
Temple University School of Medicine.....	(1930,2)		2
University of Pennsylvania School of Medicine.....	(1929)		5
(1930, 2), (1931, 2)			

University of Pittsburgh School of Medicine.....	(1931,2)	2	
Meharry Medical College.....	(1931)	1	
Medical College of Virginia.....	(1930), (1931)	2	
	FAILED -	Year Grad.	Number Failed
College			
Baltimore University School of Medicine.....	(1897)		1
*Licenses withheld.			

North Dakota January Report

Dr. G. M. Williamson, secretary, North Dakota State Board of Medical Examiners, reports the oral, written and practical examination held in Grand Forks, Jan. 3-6, 1933. The examination covered 13 subjects and included 100 questions. An average of 75 per cent was required to pass. Four candidates were examined, three of whom passed and one failed. One physician was licensed by endorsement. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Rush Medical College.....	(1930) 84.3,	(1932)	80
University of Minnesota Medical School.....	(1930)		89.5
College	FAILED	Year Grad.	Per Cent
University of Minnesota Medical School.....	(1931)		71.5
College	LICENSED BY ENDORSEMENT	Year Grad.	Per Cent
University of Minnesota Medical School.....	(1931) N. B. M. Ex.		

Book Notices

The History of Dermatology. By William Allen Pusey, A.M., M.D., LL.D. Cloth. Price, \$3. Pp. 223, with 32 illustrations. Springfield, Ill.: Charles C. Thomas, 1933.

This apparently is the first competent history of dermatology in English. It is brief but accurate and, certainly from the point of view of literary performance, most competent. One notes an error in the quotation which follows the introductory page; namely, James Henry Robinson instead of James Harvey Robinson.

In the introduction, Dr. Pusey considers first early references to dermatology in the writings of the Edwin Smith papyrus and the Ebers papyrus, turning then to the development of Greek and Roman medicine. There is a list of the diseases of the skin referred to by these important writers. Then comes the first chapter, dealing with the early account of dermatology from Egypt to Greece. Here the points raised in the introductory chapter are expanded with actual references to the writings of the ancients and with some reference to the difficulty of interpreting the writings of the past by the knowledge of the present. The second chapter considers dermatology from 300 B. C. to 1500 A. D. In the discussion of the writings of Galen, it is pointed out that he was not the founder of dermatology but that he was its first great expounder. The book fails to mention that Galen is credited with developing the formula for our modern cold cream, which might well be called the sheet anchor of dermatology unless one prefers to assign that place to petrolatum. The coming of the modern ages complicated greatly the practice of dermatology. One notes with interest the reference to "red-light" in the treatment of small-pox, a form of symbolical therapy without scientific significance; but much of ancient therapy was of this character. Especially interesting are those sections of the book dealing with the writings of Daniel Turner, founder of dermatology in Great Britain, and of Ramizzini, founder of the science of industrial diseases with especial reference to dermatology.

With the opening of the nineteenth century, dermatology, like other branches of medicine, began to advance. It now becomes possible to list many competent investigators. Then, beginning with the last half of the century, the discovery of new means of investigation and of the fact that bacteria are the causative sources of disease put dermatology on an entirely new basis. The book in its concluding chapters lists the names of many of the most noted students of this field and their chief contributions to literature. The volume is concluded with a historical index of immense value as a reference.

Like most of the books that have come from the Thomas press, this one is beautifully printed on fine stock and is a credit to every one concerned in its production.

New and Nonofficial Remedies, 1933: Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1933. Cloth. Price, \$1.50. Pp. 498. Chicago: American Medical Association, 1933.

To one who has followed the successive editions of *New and Nonofficial Remedies*, the first striking feature as he turns the pages of the 1933 edition is the greatly augmented "List of Consultants." The list contains nearly a hundred names. That the Council should be able to command the unremunerated services of these men is a high testimonial to the esteem in which it is held, as well as to the value of the work which it performs. Indeed, the Council's book is the recognized authority in the field which it covers; that is, the evaluation and acceptance of the most promising of new therapeutic agents offered in an acceptable manner by the manufacturers of pharmaceutical products to the medical profession.

The text gives adequate information concerning the composition, actions, uses and dosages of the accepted products, with detailed statement, when needed, of the means by which the identity and purity of the product are controlled. It thus gives all the information needed by physicians or pharmacologists concerning the preparations accepted by the Council.

Another noteworthy feature of the present text is the change that has been made in the general index. Always remarkably complete and diversified as concerned the products included in the book, the index has been augmented by addition of references to the Rules of the Council, contained in the first part of the book, and to the preparations in the List of Articles and Brands Accepted but Not Described (formerly "Exempted Articles"), which now have the status of "Accepted Products." The three classifications are differentiated by the use of three different type forms. The appearance and accessibility of the index have been improved by the use of indentation. A glance through the various chapters shows that the classification "Medicinal Foods" has been greatly reduced, referring now only to carbohydrate foods and vitamin preparations. The preface informs one that the deleted classes of foods have been referred to the Committee on Foods, a body separate from the Council. It is noteworthy that the total bulk of *New and Nonofficial Remedies* grows but slightly from year to year, indicating nearly an equilibrium between the new articles admitted and older ones omitted because they have been taken off the market or because they have not lived up to the promise of therapeutic value under which they were accepted, or because they are not marketed in an honest way.

Each year, at the time of reconsideration of the annual quota of accepted products, the statements concerning the general classifications under which the various products are described are scrutinized and brought abreast of the best current medical knowledge. The book is thus a guide on the frontier of rational therapeutics. The following general articles have been more or less extensively revised this year: Arsenic Compounds, Dyes, Iodine Compounds, Liver and Stomach Preparations, Radium and Radium Salts, and Silver Preparations. Among the new products admitted to *New and Nonofficial Remedies* during the past year are Trichlorethylene, an inhalation anesthetic proposed especially for use in trigeminal neuralgia; Nostal, an additional barbituric acid compound; Decholin and Decholin Sodium, bile salt preparations for use in functional insufficiency of the liver, the sodium salt being suitable for intravenous use when necessary; Biliposol, Bismo-Cymol and Iodobismitol, bismuth compounds for use in obtaining the systemic effects of bismuth, especially in syphilis; Triphal, a gold salt proposed for use in the treatment of lupus erythematosus; a number of improved liver preparations for use in the treatment of pernicious anemia; two halibut liver oil preparations of high vitamin A and vitamin D content; and Pentnucleotide, the sodium salts of the pentose nucleotides derived from the ribonucleic acid of yeast, proposed for use in infectious conditions accompanied by a leukopenia or neutropenia.

Physicians cannot dispense with the use of the newer remedies that are brought out each year; yet they cannot judge them on the basis of the manufacturers' claims and they have not the time or means to determine their merits for themselves. For this reason, every physician should possess a copy of this volume, which annually puts at his disposal an authoritative, up-to-date and unbiased estimate of these preparations.

Précis de cancérologie. Par J. Ducuing, professeur à la Faculté de médecine de Toulouse. Cloth. Price, 140 francs. Pp. 1259, with 516 illustrations. Paris: Masson & Cie, 1932.

This book has been prepared to present a complete picture of cancer from a clinical, pathologic and therapeutic point of view in a manner adapted to the needs of the medical student. The compression necessary for so ambitious a scheme has resulted in the use of illustrations that are small and almost entirely diagrammatic. Photomicrographs have been eliminated because the quality of the paper and the small size of the page do not permit of favorable reproduction. Within these limits the book is satisfactory because of the immense amount of ground covered. Obviously a dogmatic and abbreviated style is necessary, but it is astonishing how much has been compressed within a small space. While the views expressed on pathology and the clinical aspects of cancer follow the conventional lines, those on treatment are, on the whole, confined closely to the French practice. Authors are quoted without reference to the source of the information, and no bibliography is given. The student, while he will find this compend valuable as a textbook, will therefore have to consult larger works if he wishes to read more widely concerning any particular subject.

Index of Analyses of Natural Waters in the United States, 1926 to 1931. By W. D. Collins and C. S. Howard. United States Department of the Interior. Geological Survey. Water-Supply Paper 659-C. Contributions to the Hydrology of the United States, 1932. Paper. Price, 5 cents. Pp. 191-209, Washington, D. C.: Supt. of Doc., Government Printing Office, 1932.

This report is intended to serve as a guide to the larger collections of analyses of the mineral content of natural waters in the United States, including surface water, ground water, mineral water and public supplies from 1926 to 1931. Most of the publications listed are available for consultation in the larger public and educational libraries.

Food, Health, Vitamins. By R. H. A. Plimmer, D.Sc., Professor of Chemistry in the University of London at St. Thomas's Hospital Medical School, and Violet G. Plimmer. Fifth edition. Cloth. Price, \$1.20; 3/6. Pp. 143, with illustrations. New York & London: Longmans, Green & Company, 1932.

A reliable and recently revised account of the history and sources of each of the six well known vitamins, and the related deficiency diseases, makes up about three fourths of this volume. Because these chapters are brief, clear and sensibly written, they should serve as a good introduction to the subject, even for readers with little chemical background. The book should also be useful to any one whose vitamin information needs to be brought down to date. There is a good subject index but no author index or bibliography; and footnote references are given to only a few of the many investigations mentioned. To an American reader the British work appears to be somewhat overemphasized, while a greater number of the contributions from other countries could well be included. The concluding chapters on balanced diets (including menus that feature such articles as treacle, dripping and "bubble and squeak") presumably have much more practical application to British food problems than to those in this country.

Bacteriophage in the Treatment and Prevention of Cholera. By J. Morrison, C.I.E., M.B., D.P.H., Lieut.-Colonel, Indian Medical Service. Boards. Price, 4s. Pp. 31, with 31 illustrations. London: H. K. Lewis & Company, Ltd., 1932.

This was awarded the Parkin prize for the best essay "on the curative effects of carbonic acid or other forms of carbon in cholera, for different forms of fever and other diseases," by the Council of the Royal College of Physicians of Edinburgh. The author gives an introductory account of John Parkin and his interest in cholera. The main body of the essay is divided into three parts. The first of these is devoted to a description of the bacteriophage, with especial attention to the determination of types, the titration of mixtures of phage and their preparation. The second gives a short statement of the cholera problem in India. The third section, only six and a half pages, describes the therapeutic use of bacteriophage in cholera. Actually a combination of phages active against cholera and dysentery organisms has been used. Although the investigation has been pursued for four years, most of the trials have been inconclusive and the one large

controlled experiment has not reached a point at which a conclusive answer can be given. The book is interestingly written and well illustrated, but most readers will be disappointed in the small amount of evidence bearing on the question raised by the title.

Die Therapie an den Berliner Universitäts-Kliniken. Herausgegeben von Dr. Wilhelm Croner und Dr. Heinz Kalk, Oberarzt d. II. med. Klinik der Charité. Tenth edition. Cloth. Price, 15 marks. Pp. 690. Berlin: Urban & Schwarzenberg, 1932.

Each new edition of this 30 year old publication gives further proof that the University Clinics should render available the results of experience to practicing physicians who do not have time to study the more extensive scientific literature and textbooks. There is every reason why this sort of publication should become popular in this country.

Medicolegal

A Malpractice Suit Fifteen Years Delayed

(Taylor v. Shuffield (Texas), 52 S. W. (2d) 788)

The plaintiff, a minor 19 years old, through his next friend, sued the defendant physician for malpractice alleged to have been committed some fifteen years before. So far as the published record shows the defendant conceded the plaintiff's right to sue, notwithstanding the lapse of fifteen years since the alleged default, presumably recognizing the fact that because of the plaintiff's minority the statute of limitations had not run against him.

The plaintiff complained that when he was a 4-year-old child the defendant made a faulty diagnosis and gave faulty treatment for adenoids, thereby causing the plaintiff to lose his power of hearing, and that in performing a tonsillectomy at that time the defendant removed the plaintiff's uvula, palate and tonsillar pillars, thereby causing him to lose his power of speech. In consequence of the operation and of the faulty diagnosis and treatment, the plaintiff claimed he had grown up with a mentality of a child about 6 years old, although he was in fact 19 years old. The defendant denied the charge of malpractice and specifically denied that he had removed the plaintiff's uvula, palate and tonsillar pillars. He averred that the plaintiff was practically a deaf mute from his birth and the defects of hearing and speech were congenital defects. Judgment was given in favor of the plaintiff, and the defendant appealed to the court of civil appeals of Texas, Austin.

In the trial court, expert witnesses who had examined the plaintiff shortly before the trial testified that the plaintiff's uvula, palate and tonsillar pillars had been wholly or in part obliterated. This condition, they agreed, might be due to the operation, to congenital defects, to traumatic injury or to disease. One such witness attributed the patient's condition to the operation. The other two testified that they were unable to determine its origin. The trial court permitted the plaintiff's parents to testify that since the tonsillectomy he had had no apparent disease of his mouth or throat and no disease of the head or ears. The plaintiff's mother testified that continuously since the operation there had been a discharge of phlegm from the mouth and throat.

It was error, concluded the court of civil appeals, to admit the testimony of the plaintiff's parents, alleging the absence of disease of his mouth, throat, head or ears. The decisions uniformly hold that whether a person has a disease is a question calling for professional or expert testimony. A non-expert witness may testify to the presence of disease of an outward nature or to the presence of one physically apparent and obvious to any person. A non-expert witness may testify to the absence of any physical or outward evidence of disease in a person whom the witness has had the opportunity to observe closely. A non-expert witness, however, cannot testify that a person did not in fact have any disease of the throat or mouth, or any disease of the head or ears, during any given period of time.

Since the testimony of the plaintiff's parents concerning his freedom from disease should not have been admitted, the hypothetical questions that were based on that testimony were improper. Each hypothetical question was predicated solely

on the assumption that the non-expert testimony of the plaintiff's parents established the fact that he had had no disease of the throat, mouth, head or ears. Because the admission of that testimony was improper, there was no basis for that assumption, and therefore the questions were improper. The questions were furthermore improper because they did not include all the facts. The plaintiff's mother testified to the continuous discharge of phlegm from his throat and mouth since the tonsillectomy. Whether this was sufficient evidence of disease that might have caused the sloughing off of the patient's uvula, palate and tonsillar pillars was a matter for the experts. It was clearly error not to embrace the undisputed fact of the discharge of such phlegm in the hypothetical questions propounded to the experts. The decisions are uniform in holding that it is the duty of trial and appellate courts to require that all undisputed facts be fairly stated without exaggeration in the hypothetical question.

The judgment in favor of the plaintiff was reversed and the cause remanded.

Society Proceedings

COMING MEETINGS

- American Medical Association, Milwaukee, June 12-16. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.
- American Academy of Pediatrics, Chicago, June 12-13. Dr. Clifford G. Grulee, 636 Church Street, Evanston, Ill., Secretary.
- American Association for the Study of Gout, Memphis, Tenn., May 15-17. Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Ind., Secretary.
- American Association for the Study of the Feeble-Minded, Boston, May 31-June 1. Dr. Groves B. Smith, Beverly Farms, Godfrey, Ill., Secretary.
- American Association of Medical Milk Commissions, Milwaukee, June 12-13. Dr. Harris Moak, 360 Park Place, Brooklyn, Secretary.
- American Dermatological Association, Chicago, June 8-10. Dr. W. H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.
- American Heart Association, Milwaukee, June 13. Dr. Irl C. Riggan, 450 Seventh Avenue, New York, Executive Secretary.
- American Laryngological, Rhinological and Otolological Society, Chicago, June 8-10. Dr. Robert L. Loughran, 33 East 63d Street, New York, Secretary.
- American Proctologic Society, Chicago, June 12-13. Dr. Frank G. Runyon, 1361 Perkiomen Avenue, Reading, Pa., Secretary.
- American Psychiatric Association, Boston, May 29-June 2. Dr. Clarence O. Cheney, 722 West 168th Street, New York, Secretary.
- American Society of Clinical Pathologists, Milwaukee, June 9-12. Dr. A. S. Giordano, 531 North Main Street, South Bend, Ind., Secretary.
- American Therapeutic Society, Milwaukee, June 9-10. Dr. Oscar B. Hunter, 1801 Eye Street, N.W., Washington, D. C., Secretary.
- American Urological Association, Chicago, June 20-22. Dr. Gilbert J. Thomas, 1009 Nicollet Avenue, Minneapolis, Secretary.
- Association for Research in Ophthalmology, Milwaukee, June 13. Dr. Conrad Berens, 35 East 70th Street, New York, Secretary.
- Association for the Study of Allergy, Milwaukee, June 12-13. Dr. Warren T. Vaughan, 808 Professional Building, Richmond, Va., Secretary.
- Association for the Study of Internal Secretions, Milwaukee, June 12-13. Dr. F. M. Pottenger, 1930 Wilshire Boulevard, Los Angeles, Secretary.
- Conference of State and Provincial Health Authorities, Washington, D. C., June 5-6. Dr. A. J. Chesley, State Department of Health, St. Paul, Secretary.
- Connecticut State Medical Society, Hartford, May 24-25. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Illinois State Medical Society, Peoria, May 16-18. Dr. Harold M. Campbell Building, Monmouth, Secretary.
- Maine Medical Association, Poland Springs, June 26-28. Dr. Philip W. Davis, 22 Arsenal Street, Portland, Secretary.
- Massachusetts Medical Society, Boston, June 5-7. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.
- Medical Library Association, Chicago, June 19-21. Miss Marjorie J. Darrach, 645 Mullett Street, Detroit, Secretary.
- Medical Women's National Association, Milwaukee, June 11-12. Dr. Inez A. Bentley, 45 Gramercy Park, New York, Secretary.
- Minnesota State Medical Association, Rochester, May 23-24. Dr. E. A. Meyerdinger, 11 West Summit Avenue, St. Paul, Secretary.
- National Tuberculosis Association, Toronto, Canada, June 26-30. Dr. Charles J. Hatfield, Seventh and Lombard Streets, Philadelphia, Secretary.
- Nebraska State Medical Association, Omaha, May 23-25. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.
- New Hampshire Medical Society, Manchester, May 16-17. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- New Jersey Medical Society of, Atlantic City, June 6-9. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.
- New Mexico Medical Society, Roswell, May 18-20. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.
- Oklahoma State Medical Association, Oklahoma City, May 15-17. Dr. C. A. Thompson, Commercial National Bank Building, Muskogee, Secretary.
- Pacific Coast Oto-Ophthalmological Society, San Francisco, June 28-30. Dr. F. C. Cordes, Fitchburg Building, San Francisco, Secretary.
- Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 167 Angell Street, Providence, Secretary.
- South Dakota State Medical Association, Huron, May 15-17. Dr. John F. D. Cook, Langford, Secretary.
- West Virginia State Medical Association, Charleston, May 22-24. Mr. Joe W. Savage, Professional Building, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, St. Louis

16: 1-95 (Jan.) 1933

- *Changes of Eyeground in Wilson's Disease (Pseudosclerosis). A. Pillat, Peiping, China.—p. 1.
- Unusual Corneal Lesion, Probably Congenital and Familial in Character: Slit Lamp Study. G. E. de Schweinitz and A. Cowan, Philadelphia.—p. 7.
- Lipemia Retinalis. C. W. Lepard, Detroit.—p. 12.
- Hemangioma of Conjunctiva: Report of Case. M. P. Motto and F. L. Dunnagan, Cleveland.—p. 15.
- Circulation of Intra-Ocular Fluid: I. Importance of Optic Nerve. C. Berens and A. Posner, New York.—p. 19.
- Bilateral Facial Spasm: Paraspasme Facial Bilatéral of Sicard. H. L. Parker, Rochester, Minn.—p. 28.
- Vaccinia of Eyelids and Conjunctiva. M. L. Folk and E. L. Taube, Chicago.—p. 36.
- Enderitis Obliterans with Spontaneous Gangrene of Both Corneas. A. O. Pfingst and C. D. Townes, Louisville, Ky.—p. 39.

Changes of Eyeground in Wilson's Disease.—In a typical case of Wilson's disease (pseudosclerosis Westphal-Strümpell) with a Kayser-Fleischer pigment ring in both corneas, Pillat observed a heretofore undescribed fundus disease. The disease was characterized chiefly by the presence of white dots either isolated or conglomerated in the middle or outer layers of the retina, which increased in numbers toward the periphery, and a markedly diffuse degeneration in those parts of the fundus in which the white dots were present. The retinal vessels, the macula and the choroid were unaltered. The two fundi were differently affected, the right much more than the left. The presence of nightblindness in the more seriously affected eye suggested a local degenerative process of the retina. The author suggests a parallelism of changes in the various parts of the brain and of the eye and discusses the differential diagnosis between this fundus disease and other fundus conditions associated with white dots in the middle and outer layers of the retina.

American Journal of Public Health, New York

23: 1-96 (Jan.) 1933

- Effectiveness of Child Health Programs in Ontario by Survey Methods. J. T. Phair, Toronto, Canada.—p. 1.
- Addition of Vitamin D Concentrate to Milk. T. F. Zucker, New York.—p. 10.
- Nutritive Value of Cranberries. C. R. Fellers, Amherst, Mass.—p. 13.
- Laboratory Diagnosis of Endemic Typhus and Rocky Mountain Spotted Fever. L. F. Badger, Washington, D. C.—p. 19.
- Statistics and the Health Officer. G. B. L. Arner, Washington, D. C.—p. 28.
- Study of Bacteriologic Methods of Testing and Means of Disinfecting Water with Chlorine, with Particular Reference to Swimming Pool Water. W. L. Mallmann and W. Cary, Jr., Detroit.—p. 35.

Colorado Medicine, Denver

30: 1-36 (Jan.) 1933

- Iritis: Its Cause, Management, and Treatment. C. E. Sidwell, Longmont.—p. 4.
- Management of Ocular Injuries. W. C. Finnoff, Denver.—p. 7.
- *Clinical Care of Coronary Disease. L. W. Bortree, Colorado Springs.—p. 10.

Clinical Care of Coronary Disease.—Bortree believes that the first aim in treating a case of coronary thrombosis is the relief of the pain. This will require repeated doses of one-fourth grain (0.016 Gm.) of morphine at from twenty to thirty minute intervals. Shock should be combated by external heat. The morphine will also aid in its relief. Dextrose in 50 per cent solution given intravenously in from 20 to 40 cc. doses two or three times a day not only aids in relieving the shock but also furnishes extra nutriment to the heart muscle for the period before collateral blood supply

is established. Large doses of fluid intravenously may overtax the weak cardiac muscle. Stimulants are to be avoided if possible, but, if the heart is not strengthened by the morphine and its action becomes feeble, the use of small doses of caffeine sodiobenzoate is indicated. Epinephrine is dangerous and strychnine useless. An oxygen tent may relieve cyanosis. Complete rest of the entire body and mind is essential until the first emergency is past. This interval may be estimated by the time needed for the sedimentation test of the blood to return to normal. Frequent change of the position of the patient may tend to prevent pulmonary stagnation. Carbon dioxide-oxygen inhalations will aid in clearing areas of atelectasis. In the earlier stages, digitalis is to be used only to combat decompensation. During convalescence, it may aid in recuperation if used over long periods. Sedatives are needed after the first few days to control nervous irritability. Barbiturates, when well tolerated, are satisfactory; if combined with theobromine, they may aid in the restoration of coronary circulation as well as in sedation. Resumption of physical and mental activity should be gradual. Close supervision of the effect of exertion will tend to prevent damage and also furnish information as to the reserve strength of the heart. All foods that cause gas in the stomach are contraindicated. Cold liquids in large quantities will slow the coronary circulation. The patient should be taught the dangers of unwise eating and a few of the things most liable to cause trouble. A permanently crippled heart should never be subjected to the strains it formerly endured. A complete revision of the mode of living to conform to the new situation may insure the victim years of useful life.

Illinois Medical Journal, Chicago

63: 1-92 (Jan.) 1933

- *Management of Tabetic Optic Atrophy. G. F. Suker and M. M. Jacobson, Chicago.—p. 21.
- Chronic Ulcerative Colitis: Report of One Hundred and Seventy-Four Cases. M. H. Streicher, Chicago.—p. 26.
- Plea for Systematic Health Education. J. H. Beard, Urbana.—p. 28.
- Value of Health Education as Seen by Layman. Mildred Durkee Lancaster, Normal.—p. 31.
- Effectiveness of Public Health Education from General Physician's Point of View. D. J. Lewis, Springfield.—p. 33.
- Health Education from Point of View of School Officials. J. B. McManus, La Salle.—p. 37.
- Value of Public Health Instruction and Public Health Work as Seen by Public Health Official. B. K. Richardson, Springfield.—p. 41.
- *Some Observations About Treatment of Uterine Fibroids and Bleeding of Menopause. J. T. Murphy, Toledo, Ohio.—p. 56.
- Exophthalmic Goiter in Children. L. Seed and H. G. Poncher, Chicago.—p. 61.
- *Diaphragmatic Hernia: Review of Literature: Report of Case. A. J. Azar, Elgin.—p. 66.
- Acute Gangrenous Appendicitis with Unusual Pathologic Observations: Case. G. H. Gowen and G. S. Van Alstyne, Chicago.—p. 75.
- *Treatment of Peptic Ulcers with Evaporated Milk Diet. J. B. Ross, Chicago.—p. 76.
- Radical Mastoid Operation Without Plastic Surgery. M. H. Cottle, Chicago.—p. 79.
- Use of Convalescent Serum and Human Blood in Suspected Poliomyelitis. O. Barbour, Peoria.—p. 82.

Tabetic Optic Atrophy.—Suker and Jacobson state that, according to some statistics, tabetic optic atrophy has not been on the increase. It seems that more careful observation of the results obtained in the management of general systemic syphilis is indicated so that proper changes in management can be made in order to prevent some of the late central nervous system developments. Intracranial injections of mercuric chloride have given better results than any of the other methods used. There have been several cases with definite improvement or arrest of the condition with the retention of useful vision for a period of several years. A negative spinal fluid Wassermann reaction has resulted frequently. The method of choice is the intraventricular injection, which, in a large measure, is to be considered as a topical application and is a relatively safe procedure. In order to accomplish the utmost benefit in the management of tabetic optic atrophy, the diagnosis must be made early; every syphilitic patient of any years' standing should be critically examined with reference to tabes and dementia paralytica; in all these cases, careful perimetric examination should be made to determine the earliest possible field infringements, and the immediate application of intracranial injections should be followed by systemic treatment as well.

Treatment of Uterine Fibroids and Bleeding of Menopause.—Murphy presents a study based entirely on the use of the roentgen ray in the treatment of uterine fibroids. The intra-uterine use of radium is still contraindicated in several of these conditions. The type of irradiation used in these cases is a single series of high voltage roentgen therapy, 200 kilovolts, 1 mm. of copper at 50 cm. distance, with approximately two-thirds erythema dose given in three sittings, one sitting every other day. Four areas are used, one anterior, one posterior and two lateral, the size of the fields being 15 by 15 cm. In his experience the occasion for the repetition of a dose to cause a complete cessation of menstruation has not presented itself. The use of radium for a quick cessation of the bleeding is not always necessary. Following treatment, the patient may menstruate once at the normal time for the next period and there may be a small amount of bleeding at the second period. It is unusual to have more than this. The treatment can be carried on in most cases in an ambulatory manner; it requires no hospitalization unless the previous condition of the patient demands it. The menorrhagia is usually controlled within a few days and the patient begins to gain in strength and weight. It is useless to expect a tumor of large size or of marked consistency to disappear within a short time. Some of these tumors have taken from six to nine months to disappear entirely. Occasionally, a tumor, not large or of markedly hard consistency, will not disappear entirely, but the patient's symptoms are alleviated. Continuation of a uterine discharge and return of bleeding are symptoms that should not be neglected; if subsequent surgery is needed, the patient will be in a better general condition to stand the operative procedure, and, if a malignant condition is present, the patient will have received a good preoperative irradiation, which will have a beneficial effect on the prognosis of the case.

Diaphragmatic Hernia.—Azar reviews the literature and reports the case of a man, aged 30, with diaphragmatic hernia whose diagnosis in 1922 was epileptic psychosis. He was discharged as improved and remained at home until 1930, when he was committed to a state hospital. Immediately after admission he had a severe convulsive seizure. In about four weeks he had completely recovered from his epileptic seizure. The diagnosis at the author's hospital was epileptic psychosis with clouded states. Approximately five months after his admission, the patient complained of an acute pain in the left chest. Roentgen and fluoroscopic examination revealed the heart displaced in the right chest. In the lower half there was a large, circumscribed, coconut-sized area of decreased density, with an apparent absence of lung tissue. The left diaphragm could not be differentiated. A diagnosis of diaphragmatic hernia with strangulation was made. Owing to the poor condition of the patient, surgical treatment could not be considered. The patient grew steadily worse and died approximately fifty-four hours after the onset of the symptoms. From his study of the literature the author concludes that a small hernia of the diaphragm may be present for years without causing symptoms. Diaphragmatic hernia occasionally follows seemingly insufficient trauma to account for the amount of diaphragmatic injury. It is more frequent in the male than in the female and on the left side than on the right. Congenital diaphragmatic hernias constitute the largest number of diaphragmatic hernias, with the traumatic and acquired equally numerous. The occurrence of these hernias is usually through a normal opening in the diaphragm, the dome or the embryonic fusion points. Every case of gunshot, stab wound or crushing injury of the chest is a potential diaphragmatic hernia. Thoracic stomach or eventration is not a true diaphragmatic hernia. Early diagnosis and early surgical intervention can reduce the mortality.

Peptic Ulcers Treated with Evaporated Milk Diet.—Ross reports five cases of peptic ulcer in which he substituted evaporated milk for fresh milk and cream. He states that evaporated milk contains all the vitamins that bottled milk is depended on to supply. The caloric value is 43 to the ounce. It is of uniform composition, easily obtainable, cheap and sterile. There is no chance of bacteria entering the stomach in the milk to aggravate the condition. In cases of peptic ulcer it is necessary to give small amounts of food at frequent intervals. Evaporated milk, having twice the concentration of fresh milk and being readily assimilated with no irritation to

the stomach, may be given in the same quantities as fresh milk, or even larger ones, and has the advantage of possessing more food value and mineral contents. It is unnecessary to add additional fat in the form of cream to increase the caloric content. The author observed that some patients, who give an allergic reaction to fresh milk, are tolerant to evaporated milk. It is necessary, as a rule, to administer alkalis with the milk diet. Bismuth subnitrate and ethyl aminobenzoate may be prescribed as an anodyne.

Journal of Allergy, St. Louis

4: 87-162 (Jan.) 1933

- Preparation and Standardization of Pollen Extracts for Treatment of Hay Fever. R. A. Cocke and A. Stull, New York.—p. 87.
Studies on Pollen and Pollen Extracts: IX. New Extracting Solution. L. Unger and Marjorie B. Moore, Chicago.—p. 92.
Notes on Treatment of Hay Fever. A. Colmes, Boston.—p. 98.
Ragweed Season of 1932: In the United States, Canada and Mexico. O. C. Durham, North Chicago, Ill.—p. 105.
Importance of Molds as Allergic Excitants in Some Cases of Vasomotor Rhinitis. H. S. Bernton and C. Thom, Washington, D. C.—p. 114.
Asthma from Life Insurance Standpoint. H. Old, Philadelphia.—p. 122.
*Some Rhinologic Aspects of Allergy. W. T. Vaughan, Richmond, Va.—p. 127.
Urinary Proteases in Bronchial Asthma: Clinical Study. A. Trasoff and D. R. Meranze, Philadelphia.—p. 136.
Allergic Pruritus: Neurotic Excoriations. B. Mittelmann, New York.—p. 141.
Intolerance to Whitfield's Ointment as Cause of Failure in Treatment of Epidermophytosis. S. Ayres, Jr., and N. P. Anderson, Los Angeles.—p. 146.
Food Sensitization Dermatoses: Especial Consideration of Primary Type of Acneform Distribution: Preliminary Report. C. White, Chicago.—p. 151.

Rhinologic Aspects of Allergy.—Vaughan states that when the local picture suggests allergy, further confirmation can usually be obtained by questioning the patient concerning other allergic manifestations and concerning a family history of allergy. It is not sufficient to inquire merely for personal or family history of asthma, hay fever or urticaria. Allergy may also be manifested as periodic headaches, eczema, colitis, food upsets or disagreements, sneezing barrages, intolerance of dust, angioneurotic edema, drug idiosyncrasy, and so on. The finding of positive cutaneous reactions to specific allergens further establishes the diagnosis. All that has been said concerning asthma applies equally to vasomotor rhinitis. In both conditions the best results will be obtained from close cooperation between the rhinologist and the allergist. Even so, one shall find that there is a certain residual percentage which will not respond even to these combined efforts and which impress on one a realization that, in spite of all the advances that have recently been made in allergic diseases, one is still in a large measure ignorant of the underlying pathologic process which makes one person appear allergic and another nonallergic.

New England Journal of Medicine, Boston

208: 113-176 (Jan. 19) 1933

- Comparative Mortality Study of Acute Appendicitis. I. J. Walker, Boston.—p. 113.
Appendix Abscess: Operation Without Removal of Appendix. D. S. Adams, Worcester, Mass.—p. 123.
What is Nephrosis? H. A. Christian, Boston.—p. 129.
Heliotherapy in Treatment of Surgical Tuberculosis. J. S. Barr, Boston.—p. 131.
Health Education in the City of Boston. Ruth I. Parsons, Malden, Mass., and C. E. Turner, Cambridge, Mass.—p. 134.
Medical Progress: Progress in Tuberculosis, 1931-1932. J. B. Hawes 2d and M. J. Stone, Boston.—p. 141.

208: 177-236 (Jan. 26) 1933

- Observations on Cardiovascular Syphilis. T. B. Mallory, Boston.—p. 177.
*Diagnosis of Cardiovascular Syphilis. P. D. White, Boston.—p. 179.
Treatment of Syphilitic Cardiovascular Disease. C. M. Smith, Boston.—p. 185.
Discussion of Syphilitic Heart Disease. S. A. Levine, Boston.—p. 188.
Contractions of Neck Following Burns. C. G. Mixer, Boston.—p. 190.
Dermatitis from Rubber Gloves. J. G. Downing, Boston.—p. 196.

Cardiovascular Syphilis.—White states that the diagnosis of cardiovascular syphilis is one of the most important problems of internal medicine because syphilitic disease of the aorta or of the heart of any considerable degree is serious, its presence generally signifying that death is close at hand; if a diagnosis of aortic or cardiac syphilis can be made early or can be reasonably suspected, treatment will be much more effective

than in the later stages of the disease, but the diagnosis is often difficult and demands the keenest appraisal of all data by an experienced worker. The author discusses various aspects of the disease including its absolute and relative incidence and its relationship to the history of the primary lesion, to sex and age, to social status and occupation, and to symptoms, signs and laboratory data. He bases his information on the published work of other authors and on two series of cases, one consisting of seventy-eight clinical cases of his own, seen in private practice in the last ten years, and the other made up of fifty necropsies at the Massachusetts General Hospital, also covering the last ten years. The two symptoms ordinarily thought to be particularly common and serious in cardiovascular syphilis are angina pectoris and cardiac asthma or paroxysmal dyspnea. It is true that these symptoms are serious, but they are in no way diagnostic. Other symptoms such as dyspnea, palpitation, precordial pain and tenderness, weakness, syncope, cough and hoarseness are in no way common or characteristic of cardiovascular syphilis. If there is a brassy cough or hoarseness, one should look for aortic aneurysm. The symptoms of congestive failure are produced by myocardial weakness from any cause. There are two important groups of signs of cardiovascular syphilis, but only a certain variety of one of these is absolutely diagnostic. Free aortic regurgitation is commonly found in cases of cardiovascular syphilis and produces a loud blowing diastolic murmur along the left sternal border, especially loud at the right of the upper sternal border and is frequently transmitted to the apex, and a waterhammer (Corrigan) arterial pulse with wide pulse pressure (which is commonly close to 100 mm. of mercury with systolic pressure at from 140 to 150 and diastolic pressure at from 30 to 40). The other important condition that may give rise to signs in cardiovascular syphilis is dilatation of the aorta, general or localized. This is, however, an unreliable ground for diagnosis for not only may there be no aortic dilatation at all in syphilitic aortitis, but most instances of aortic dilatation do not have syphilis. Cardiac enlargement is found consistently in cardiovascular syphilis when there is aortic regurgitation. The heart rhythm is usually normal. Hypertension and signs of congestive failure are in no wise characteristic of cardiovascular syphilis.

Oklahoma State Medical Assn. Journal, Muskogee

2G: 1-32 (Jan.) 1933

- Transurethral Prostatectomy. R. Bolend, Oklahoma City.—p. 1.
Stereoscopic Treatment of Metrophoria. W. A. Huber, Tulsa.—p. 5.
Infectious Mononucleosis. C. M. Fullenwider, Muskogee.—p. 8.
Fractures of Tibia. C. R. Rountree, Oklahoma City.—p. 10.
Fractures of Femur, with Special Reference to Neck. H. A. Scott, Muskogee.—p. 12.
Diseases of Thyroid Gland and Treatment. F. H. McGregor, Mangum.—p. 14.
Pyelitis. H. J. Evans, Tulsa.—p. 17.
Enuresis. C. F. Paramore, Shawnee.—p. 18.
Neglected Field of Vaginoperitoneal Operations. W. W. Babcock, Philadelphia.—p. 20.

Enuresis.—In treating cases of enuresis, when, after careful examination, the condition is found to be the result of bad habit formation, Paramore gives the parent the following instructions: 1. Give the child no liquids after 4 p. m., except half a glass of water with supper. 2. Do not let the child run about after 4 p. m. Care should be taken to secure for the child a simple, natural life, free from excitement or overtaxing of the nervous system. 3. Have the child sleep alone and not on its back. This can be effected by putting a towel around him with the knot at the back. 4. Put the child to bed at 7 p. m. Be sure the bladder is emptied by a willed evacuation before the child goes to bed. 5. Have the child eat just three meals a day. No feedings at all between meals. 6. Do not let the child eat any candy, cake, ice cream, soda pop, chocolate, jam, jellies or syrup. 7. Do not let the child drink tea, coffee, cocoa or meat broths. 8. Do not let the child have salty or highly seasoned foods. 9. Use as little salt on foods as possible. 10. Do not let the child eat meat or egg for supper. 11. Take the child up at exactly 10 p. m. and a 6 a. m., and be sure that it is thoroughly awakened and has a voluntary urination. These hours are varied to meet the needs of the individual child. The author concludes that this method must be pursued every night, without any interruption, as any variation sets the treatment back to the beginning.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Glasgow Medical Journal

1: 1-32 (Jan.) 1933

- Cardiac Infarction: Study of One Hundred and Forty-Eight Cases. A. W. Harrington and J. H. Wright.—p. 1.
Hodgkin's Disease: Unusual Case. C. M. Fleming.—p. 13.

Indian Medical Gazette, Calcutta

68: 1-60 (Jan.) 1933

- Result of Forecast of Cholera, Smallpox and Plague in India in 1932 and Forecast for 1933. L. Rogers.—p. 1.
Duration of Life of Embryos of Wuchereria Bancrofti in Human System. S. S. Rao.—p. 3.
*Treatment of Chronic Intestinal Amebiasis with Alkaloids of Holarrhena Antidysenterica (Kurchi). H. W. Acton and R. N. Chopra.—p. 6.
Study on Preparation of an Efficient Extract of Kurchi (Holarrhena Antidysenterica). A. B. Ghosh.—p. 13.
Studies on Inguinal Granuloma. T. B. Menon.—p. 15.
Rabies in Mongoose: Further Observations. S. D. S. Greval.—p. 20.
Easy Method for Estimating Protein Content of Milk. B. B. Brahmachari.—p. 22.
Comparative Notes on Cryoscopy of Milk. E. H. Bunce.—p. 23.

Chronic Intestinal Amebiasis.—According to Acton and Chopra, the alkaloids of *Holarrhena antidysenterica* are powerful curative agents in intestinal amebiasis. In acute amebic dysentery, intramuscular injections of 2 grains (0.13 Gm.) daily of the hydrochloride produce a cure as rapidly as emetine, but they are painful. The bismuthous iodide compound of the total alkaloids is an effective remedy against chronic intestinal amebiasis. The proportion of probable cures to failures in their series of seventy-eight cases was 3.16:1, which compares favorably with Knowles' series with emetine bismuth iodide, in which his ratio was 1:3.5. The bismuthous iodide should be administered orally in doses of 10 grains (0.65 Gm.) twice daily, preceded half an hour by a mixture containing 1 drachm (4 Gm.) of sodium bicarbonate and 40 grains (2.6 Gm.) of sodium citrate. No strict dietary measures are necessary unless the relapse is of an acute nature. In simple cases, when there is no mixed infection with bacillary dysentery, a course of ten days' duration cures a large number of patients. When a mixed infection exists, a course of from fifteen to twenty days may be necessary. A second course is not desirable. In obstinate and persistent cases resisting treatment, a prolonged course of three months or more of a standardized extract of kurchi from 1 to 2 drachms twice daily, with or without *Plantago ovata* (Isabgol) is often effective. When mixed infections exist, a course of autogenous vaccines should precede the treatment with the kurchi bismuthous iodide compound.

Journal of Anatomy, London

67: 215-353 (Jan.) 1933

- Connections of Anterior Nucleus of Thalamus. W. E. le G. Clark and R. H. Boggan.—p. 215.
Hypophysiotractor Vessels and Their Colloid Accompaniment. G. T. Popa and Una Fielding.—p. 227.
Afferent Nerve Supply of Mesentery and Its Significance in the Causation of Abdominal Pain. D. Sheehan.—p. 233.
Quantitative Study of Lymphocyte Production. J. M. Yoffey.—p. 250.
Early Development of Man, with Especial Reference to Development of Mesoderm and Cloacal Membrane. J. Florian.—p. 263.
*Position of Vermiform Appendix as Ascertained by Analysis of Ten Thousand Cases. C. P. G. Wakeley.—p. 277.
Vertical Axes of Femur and Their Relations: Contribution to Study of Erect Position. T. Walsley.—p. 284.
Lumbar and Lumbosacral Diarthrodial Joints. P. N. B. Odgers.—p. 301.
Cranio-metric Memoirs: V. Inferior Gnathic Triangle: New Cranial Triangle, Its Significance in Modern and Fossil Man, Anthropoids and Lower Mammals. J. Cameron.—p. 318.
Anatomy of Double-Headed Snake. W. J. Heasman.—p. 331.

Position of Vermiform Appendix.—Wakeley lists the relative frequencies of the positions which the appendix may occupy. His observations are founded on 10,000 cases. The various sites of the appendix and their frequency are as follows: 1. The anterior or preileac position is rare (1 per cent). 2. The "splenic" or postileac position is even more rare (0.4 per cent), only forty cases being observed in the 10,000 cases. 3. The pelvic or descending position is the second most common position and was found in 31.01 per cent of the series. 4. The sub-cecal position, in which the appendix is found beneath the head of the cecum, was present in 2.26 per cent of the cases. 5. The postcecal and retrocolic positions were observed in 65.28 per

cent. 6. Ectopic positions of the appendix are curiosities. Only five cases were encountered in the 10,000 cases examined. In one case there was complete transposition of the abdominal viscera. In two the appendix was prehepatic in position, while in the other two cases it was lying with the cecum in the umbilical region below the stomach and transverse colon.

Journal of Neurology and Psychopathology, London

13: 193-288 (Jan.) 1933

The So-Called Law of Anticipation in Mental Disease. A. S. Paterson.—p. 193.

Cerebromacular Degeneration: Clinical and Pathologic Notes of a Case. E. D. Macnamara, W. E. C. Dickson and T. R. Hill.—p. 211.

Cerebrospinal Fluid in Two Hundred and Thirty Cases of General Paralysis After Malarial Treatment. B. Reid.—p. 223.

Journal of Tropical Medicine and Hygiene, London

36: 17-32 (Jan. 16) 1933

Bilharzial Cirrhosis: Egyptian Splenomegaly. H. B. Day.—p. 17.
Notes on Recent Cases of Trypanosomiasis (T. Gambiense). E. D. Greig.—p. 23.

Journal of Oriental Medicine, South Manchuria

17: 65-83 (Dec.) 1932

Amebic Dysentery in the Marshall Islands. M. Yato.—p. 65.
Detoxicating Action of Corpus Luteum on Placental Extract. S. Takahashi.—p. 70.

Roentgenography of Blood Vessels. G. Irie.—p. 72.
Influences of Ascaris Infection on Growth of School Children. I. Sumi and S. Kawasaki.—p. 73.

Biologic Studies of Rays: I. Influence on Blood Pressure and Their Mechanical Processes. T. Kodama, B. Tanaka and S. Suzuki.—p. 74.
Nonspecific Fixation of Complements by Normal Rabbits' Serum and Alteration of Its Positive Percentage. B. Mitsue.—p. 76.

Effect of Blood Transfusion on Number of Platelets. K. Kato.—p. 77.
Influence of Radium on Tuberculous, Carcinomatous and Simple Erosions of Portio Vaginalis Uteri: Part IV. Summarized Consideration of Experiments. M. Sasaki.—p. 79.

Influence of Radium on Erosions of Portio Vaginalis Uteri.—Sasaki subjected to experimental test, by radium, tuberculous, carcinomatous and simple erosions of the portio vaginalis uteri. He summarizes the results of his experiments as follows: 1. Radium irradiation did not appear to influence the general states of the patients, such as nutrition hindrance and pyrexia, and did not cause secondary reactions. 2. Portio vaginalis uteri became smaller; the erosions were gradually covered with a yellowish white membrane and diminished in breadth, so that they bled no more by touch and finally became cicatricial. 3. The uterine glands degenerated and diminished, e. g., papilla building at the gland walls decreased, and the glands themselves became smaller and simple; the gland cells showed various degenerations in their nuclei and protoplasm. The infiltration of migratory cells around the glands and between the gland cells gradually increased. 4. Interstitial tissue gradually diminished and degenerated. Around the degenerated gland tissue, tuberculous and carcinomatous tissue, fibroblasts, fibrils of the connective tissue and young fibrous connective tissue hypertrophied. In some cases the fibroblasts and fibrils of the connective tissue at first increased and then decreased. Hypertrophied tissues sometimes resembled reticulum tissue. 5. The quantity of infiltrated migratory cells in the interstitial tissue increased and then decreased. Small round cells increased and decreased in proportion with the migratory cells; pleomorphic cells and eosinophil cells increased remarkably and then decreased, and plasma cells gradually increased. Increase and decrease of the migratory cells were not simple but differed in quantity and quality. 6. Muscular tissue showed no remarkable changes. 7. Histogenous mast cells increased around the degenerated uterine glands and tuberculous and carcinomatous tissues. The author concludes that the curative effect of radium rays on tuberculous, carcinomatous and simple erosions of portio vaginalis uteri restrain the functions of radio-sensitive tissue, as the uterine glands, carcinomatous tissue and tuberculous bacilli, or cause them to degenerate: their degenerative products stimulate the surrounding connective tissue, so that the fibroblasts and fibrils of the connective tissue increase, and the radium rays themselves assist them to increase. The histogenous mast cells are also increased by radium rays and produce fibrous colloid substance to form the fibrils of the connective tissue. These phenomena promote cicatricial formation with fibrous connective tissue at the irradiated diseased focuses in relation with one another.

Presse Médicale, Paris

41: 369-392 (March 8) 1933

Autochthonous Kala-Azar of Adult. D. Olmer and J. Olmer.—p. 369.
Anorectal Primary Actinomycosis. R. Bensaude.—p. 371.
*Intravenous Injections of Alcohol in Treatment of Septicemia. M. Hamburger and Guérin.—p. 375.
Oily Suspension of Insulin and Its Indications. H. Chabanier, C. Lobo-Onell and E. Lelu.—p. 377.

Alcohol in Treatment of Septicemia.—Hamburger and Guérin recommend the intravenous injection of alcohol in cases of grave septicemia which fail to respond to the usual therapeutic measures. Acute and prolonged septicemias are amenable to this therapy regardless of the type of organism isolated in blood culture, but to avoid failure it is essential to institute the therapy previous to the appearance of organic weaknesses, cardiac insufficiency or pulmonary, renal or hepatic involvement. The authors report two cases of septicemia refractory to the habitual therapy which were cured by intravenous injections of alcohol. They also call attention to Bär's success with voluminous intravenous injections of alcohol in puerperal sepsis. The technic of the medication is simple. The alcohol is used in a 33 per cent dilution with dextrose, which prevents coagulation and hemolysis. The quantity injected varies from a few to 200 cubic centimeters. Care should be taken not to aspirate blood into the syringe, and the syringe and needle should be coated with paraffin. The injection should be made slowly. The pain felt along the vein disappears within a few minutes. Occasionally the pain may last one or two days. Thromboses are rare. Redness of the face, sweats, gaiety or sleepiness occur only if large doses are injected. It is opportune to make the injections during the chills experienced by some patients. The results of the therapy are controlled by watching the temperature, which usually exhibits a lytic drop, and the blood cultures, which become negative.

Medicina Contemporanea, Lisbon

51: 29-38 (Jan. 29) 1933

*Medical Treatment of Gastroduodenal Ulcer by Intravenous Injections of Sodium Benzoate. C. Godoy.—p. 29.

Treatment of Gastroduodenal Ulcer by Injections of Sodium Benzoate.—Godoy states that gastroduodenal ulcers may be cured by medical treatment. Bazzano's treatment, which consists of daily intravenous injections of 2 cc. of a 25 per cent solution of sodium benzoate in sterilized twice distilled water, while the patient is kept at complete rest and receives the general diet of a hospital, causes a stimulation of the defensive powers of the gastric wall, modifies the gastric secretion creating favorable conditions for the healing of the ulcers, and promotes better general and nutritional conditions in the patient. The injections, when given intramuscularly, are painful. The treatment includes from fifteen to forty injections and is controlled by the disappearance of the roentgen signs of ulcer (such as the niche image), by the disappearance of the spasms, contractures and hyperkinesia, by the more or less rapid passage of food from the stomach into the duodenum, by the favorable modifications of the gastric secretion (as determined by the analysis of the gastric juice), and by the amelioration of the digestive disturbances. When the healing of the ulcer is shown in the roentgenogram, ten more injections are given (one every other day) in order to obtain the consolidation of the healing of the ulcer. The first injections are immediately followed by a painful sensation at the site of the ulcer and also by a sensation of warmth in the stomach and in the entire abdomen. Both sensations, however, are transient. Pain and vomiting, which coexist with the ulcer during its evolution, rapidly disappear, usually after the sixth injection. The heartburn is the last symptom to disappear. Examination of the gastric juice shows hyperacidity in some cases, while there is hypo-acidity in other cases. In six out of seven gastroduodenal ulcers of different types (simple gastric ulcer, perforated peptic ulcer and round ulcer), the author obtained satisfactory results from the injections of sodium benzoate. The seventh patient, who did not derive any benefit from the treatment, presented great stasis caused by stenosis of the pylorus due to a callous pyloroduodenal ulcer. Surgical intervention was necessary in this case. The remaining group of six patients may be divided into two subgroups: those who

received the treatment some time ago and those who are still under treatment. In the patients of the first subgroup the roentgen indications of ulcer had entirely disappeared at the end of the treatment and the clinical symptoms were greatly improved. The patients in the second subgroup, who had not as yet received a sufficient number of injections, showed such marked clinical and roentgen improvement that the prognosis seems to be promising for the continuance of the treatment.

Deutsche medizinische Wochenschrift, Leipzig

59: 317-354 (March 3) 1933

- Is Syphilis a Dying Disease? T. Grüneberg.—p. 317.
 *Treatment of Diabetes with Diet of High Carbohydrate and Low Fat Content. M. Rosenberg.—p. 320.
 *Dangers of Tonsillectomy. E. Wirth and G. Renno.—p. 322.
 Blood Picture During Withdrawal of Morphine. F. Sioli and M. Rinkel.—p. 323.
 Successful Treatment of Keratomalacia in Human Beings by Means of Carotene and Vitamin A Preparation. H. Brugsch.—p. 325.
 Technic of and Indications for Histamine Iontophoresis. H. Behrend.—p. 326.
 Experiments with Growth Hormone. F. Wadehn.—p. 327.

Treatment of Diabetes with Diet of High Carbohydrate and Low Fat Content.—Rosenberg states that in principle he is no adherent of the group that advocates a diet of high carbohydrate and of low fat content for the treatment of diabetes mellitus, because he has noted that the prolongation of this diet generally does not have a favorable effect on the tolerance of the diabetic patient. Moreover, his experiences with a diet that gives the patient only the absolutely necessary amounts of sugar, provides most of the necessary calories in the form of fats, and, of course, can be varied with the aid of insulin, were as a rule satisfactory. However, on the basis of von Noorden's remarks, he decided to try the diet with high carbohydrate and low fat content in a certain group of diabetic patients, in whom glycosuria persists in spite of a diet with low carbohydrate and high fat content, because an increase in the insulin dose leads to hypoglycemic reactions. He reports clinical histories which indicate that in cases of this nature the diet not only counteracts the glycosuria but also permits a gradual decrease in the insulin dosage.

Dangers of Tonsillectomy.—Wirth and Renno report that of the 2,766 tonsillectomies performed in their clinic from 1920 to 1932, the majority remained free from complications. Hemorrhages developed in 2.3 per cent of the cases, temperature increases of over 37.5 C. (99.5 F.) were observed in 5.8 per cent, and bronchopneumonia developed in 0.2 per cent. From this the authors conclude that, although tonsillectomy is not a "dangerous" operation, it is not entirely harmless, for there were two fatalities, resulting from hemorrhage and from hemorrhage and bronchopneumonia, respectively. Before deciding in favor of a tonsillectomy, the general condition, the age, the danger of hemorrhage and whether the expected advantages are such as to warrant the exposure of the patient to possible dangers should be taken into consideration.

Die ärztliche Praxis, Vienna

7: 68-96 (March 15) 1933

- *Intermittent Claudication. H. Schlesinger.—p. 65.
 *Growth Disturbances of Puberal Period. R. Neurath.—p. 67.
 Ray Therapy with Electromagnetic Short and Ultrashort Waves. P. Liebesny.—p. 68.
 Specific and Nonspecific Therapy in Septic Diseases. R. Boller.—p. 73.
 Value of Ambulatory Vaccine Therapy in Acute and Chronic Neuritis. M. Schacherl.—p. 74.
 Differential Diagnostic Significance of Pyuria. V. Blum.—p. 75.
 Secondary Effects of Medicaments. A. Fröhlich.—p. 76.

Intermittent Claudication.—The recognition of intermittent claudication is, according to Schlesinger, usually comparatively simple. The anamnesis reveals that pains, paresthesias, spasms or weakness develop in the course of walking, but that they disappear again following a short rest. If examination of the arteries of the legs of such patients reveals the absence of some or of all typical pulses, the diagnosis is usually definite. Intermittent claudication is the result of arterial spasms and is not a disease entity, but it may develop in the course of every arterial disease or in arteriosclerosis, thrombo-angiitis obliterans, traumatic arterial diseases, aneurysms, syphilitic arteritis of the extremities, periarteritis nodosa and acute arteritis. The fact that it is an early sign of threatening gangrene

gives intermittent claudication a special importance. By giving the proper attention to this early sign, it is often possible to prevent or at least postpone the development of gangrene, although there is one form in which this is impossible; but fortunately this form is comparatively rare. The author discusses the pathogenesis of intermittent claudication, giving especial attention to the disturbance of the arterial innervation. He mentions several contributing factors, such as the excessive use of condiments, overexertion, traumas, infections, exposure to cold and particularly nicotine. Observations in several hundred cases convinced him that nearly all patients are smokers and that they are highly susceptible to nicotine. He points out that intermittent claudication is often erroneously diagnosed as flatfoot neuritis, muscular rheumatism, gout, varicose veins and periostitis. The prognosis is not always as unfavorable as is often assumed, for a rational prophylaxis in the form of frequent lukewarm footbaths, proper care of the nails, suitable footwear, and protection against injury, overexertion, heat and cold can prevent gangrene. The author evaluates the various therapeutic measures that have been recommended for intermittent claudication. The fact that the benign form reacts to many medicaments has led to the recommendation of many preparations. Of the various forms of roentgen treatment (irradiation of the vessels, of the lower portion of the spinal column, or of the suprarenals), the first two are occasionally effective. Galvanization and short wave therapy have also been tried, but the author found the latter ineffective. He advises caution in every form of heat application, because angiospasm may result. In evaluating the much disputed sympathectomy, he points out that indiscriminate use has brought it into discredit. He considers it justifiable in cases that are refractory to other measures and in those in which gangrene threatens.

Growth Disturbances of Puberal Period.—Neurath thinks that growth disturbances during the puberal period are primarily of endogenous origin. He discusses the abnormalities of the spinal column, the scolioses and the kyphoses. He points out that in countries in which rickets are rare these forms of spinal deformities are likewise rare, and he thinks that this favors an endocrine origin rather than the causal significance of overburdening by school work. Disproportional growth; that is, excessive growth in height without proportional increase in mass, is occasionally noted during the puberal age. The beginning of the increasing development of such disorders as genu valgum and coxa vara falls generally into the puberal period. Schlatter-Osgood's disease of the tubercle of the tibia, Kienböck's osteitis of the semilunar bone, Köhler's disease of the scaphoid bone, Perthes' disease of the head of the femur and osteochondritis dissecans all seem to be characteristic of the period of increasing growth, while multiple cartilaginous exostoses show their most intense development during the same period. Genu valgum not only develops as a late rachitic symptom but also as partial manifestation of a hypogenital condition. To the hypogenital group of growth disturbances also belong the acromegalic manifestations of puberty, prepuberal eunuchoid adiposity and temporary acromicria.

Hospitalstidende, Copenhagen

76: 85-112 (Jan. 26) 1933

- Biologic Connection Between Anterior Lobe of Pituitary Body and Thyroid Gland. Marie Krogh and H. Økkel.—p. 85.
 *Changes in Blood Picture After Stomach Resection, with Especial Regard to Pernicious Anemia. M. C. Lottrup and K. Roholm.—p. 97.
 Myeloma with Epleptiform Spasms: Case. M. Ellermann and G. E. Schröder.—p. 102.

Changes in Blood Picture After Stomach Resection.—Lottrup and Roholm found slight anemia in about 35 per cent of the twenty-three cases examined, and moderately grave anemia in about 20 per cent. They say that megalocytosis appears most often in patients with a negative congo reaction. The volume index and color index frequently show considerable differences, indicating that there are both a simple and a megalocytary anemia, or a combination of Faber's microcytotic achylanemia and pernicious anemia. Stomach resection alone is hardly thought to lead to pernicious anemia. In only one case was the diagnosis of pernicious anemia possible, perhaps probable; in three cases, signs of a megalocytary change in the blood picture were noted.

